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JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION

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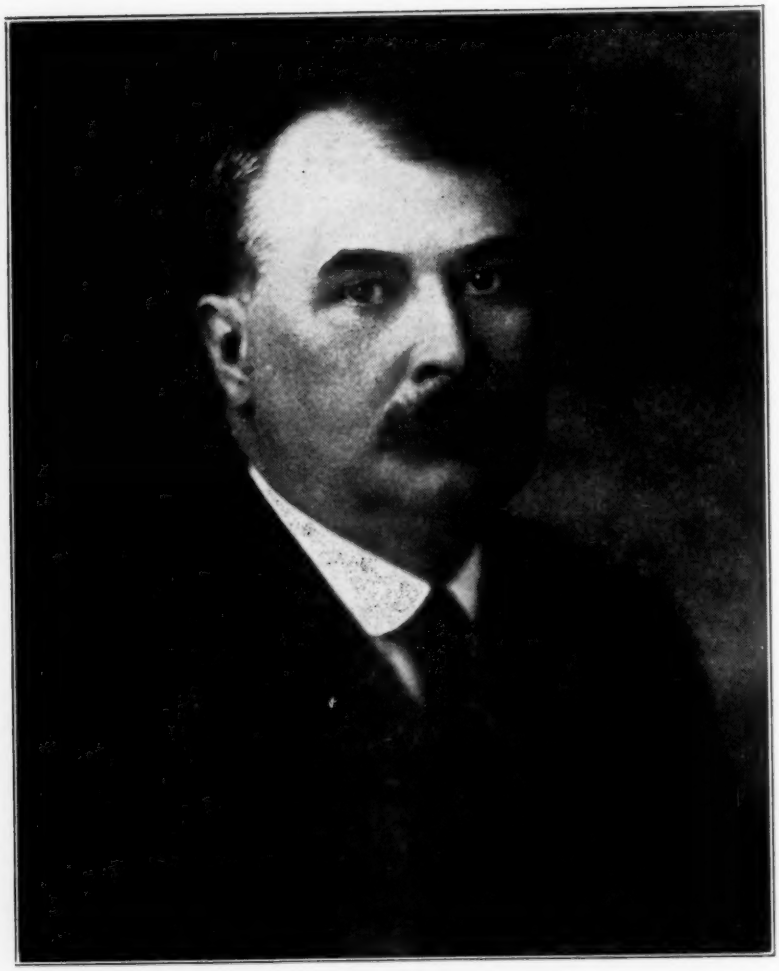
President, National Association of Boards of Pharmacy, 1917–1918



W. P. PORTERFIELD

JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION

VOL. VII JUNE, 1918 NO. 6

WILLIAM PERRY PORTERFIELD.

W. P. Porterfield, president of the National Association of Boards of Pharmacy is a native of West Virginia. He was born at Martinsburg, December 20, 1856, and received his early education in the public schools of this city. In 1878, he graduated from the Philadelphia College of Pharmacy.

In 1882, Mr. Porterfield moved to Dakota, before the division of the territory and when the population was less than 150,000. He located in Fargo and here opened a drug store under the firm name of Fout and Porterfield. Eleven years ago he was appointed member of the North Dakota Board of Pharmacy. He was twice elected president of the State Pharmaceutical Association and has served on the Executive Committee of the N. A. B. P. for three years and at the Indianapolis meeting was elected president.

Mr. Porterfield is a farmer as well as pharmacist, and on an extensive scale, farming nearly two thousand acres. He is deeply interested in municipal and state affairs, has been a member of the Fargo Park Board for the last ten years, and State Senator for four years. He is director of one of Fargo's banks and is secretary of the Red Cross in his home city and Inspector of Explosives for the State of North Dakota. E. G. E.

EDITORIAL

E. G. EBERLE, Editor 253 Bourse Bldg., PHILADELPHIA

THE INTERDEPENDENCE OF MEDICINE AND PHARMACY IN WINNING THE WAR.

THERE is a disposition among some army medical men, and others, to underestimate the importance of pharmacy, and yet they must admit that pharmaceutical skill and knowledge are significant in the treatment and surgical procedure for the rehabilitation of their patients. In civil practice some doctors prepare and dispense the medicines employed by them, but even then the constituents or finished preparations are made by pharmacists. Such practitioners assume privileges for which they are unwilling to grant druggists the reciprocity of counter-prescribing, and rightly so. Two wrongs never make a right.

In providing a reliable materia medica for the medical profession pharmacists perform a responsible and inherent duty. They are willing to work in their particular sphere of activity; they do not expect undeserved distinction, but they fail to appreciate why the degree of their importance should now be less, when the exigency for the kind of service they are qualified for is greater. Reason indicates to us that the functions of pharmacy have not changed, but simply have not been adapted to our military organization. Dr. Philander P. Claxton, U. S. Commissioner of Education, said in an address last month that the greatest danger to the Allies is not in the exhaustion of man power but the loss of technical and scientific men. Because there has been no provision in the Army for pharmacists, in the capacity for which training and education have qualified them, many have secured commissions in other departments of the Service, and thus the ranks of available pharmacists have to that extent been depleted. It is reasonable to assume that unless provision is made for them, those in the succeeding drafts will do likewise. It is admitted that if commissions are granted to pharmacists it will improve the general status of pharmacy, but surely this is desirable and in the interest of public health.

The devotion of medical men speaks for their splendid citizenship, but there is a serious doubt as to whether the Medical Department will be able to enroll a sufficient number of doctors for the needs of the growing army unless the services of pharmacists are utilized. Preparedness has attained to a higher valuation than formerly. Pharmacists desire to help in winning the war as loyal citizens and as participants in the best medical service possible for the men engaged in making the world a safer and better place to live in. They contend that organized pharmaceutical service in essential to the Medical Department of the U. S. Army because there is an interdependence between medicine and pharmacy. Even in

civil life this has not been strongly enough impressed nor fully appreciated by either profession. Pharmacists on the one hand realize that compelling necessity has added many non-pharmaceutical lines to the drug stocks, and this makes them reluctant in vigorously asserting their rights to professional recognition, notwithstanding that the services rendered by them are so determined by law and practice, the Government in its several departments and the medical profession by accepting of their products and standards. Physicians, on the other hand, are not fully responsive to the claims of pharmacy, chiefly because of the conditions in the average drug store; their perspective is the stock, whereas it should be the department and the service which is concerned with and contributes to the progress of medicine.

Development proceeds along the lines of least resistance, and hence the conditions of pharmacy are responsive to environments, but this should not inhibit coöperation of physicians and pharmacists in efforts which, if successful, will unquestionably redound to the advance and benefit of both professions. Medicine can only hope to continue its forward strides if pharmacy is progressive, and if the services of pharmacy are not most efficiently utilized now, when it seems almost imperative that they should be, both professions will suffer as a result, after the war. The future progress of medicine is largely dependent on that of professional pharmacy, and the sooner the interdependence and interrelation of these professions is recognized the better for them and for the public. Disparagement to the least of these will do damage and injury to both.

The armamentarium of the doctors has been made possible by pharmacists and is a prerequisite in the successful treatment of the sick and wounded. Pharmacists have, under trying conditions, solved the problems of drug production and supply; their suggestions in a number of important matters have been accepted and practically applied by the Government; they have loyally and patriotically given their money, time and places of business for carrying into effect the beginnings of several of the great preliminary promotions of the country; they have labored under difficulties to meet the demands for medicines; they have cheerfully accepted restrictive buying and selling orders; relatively more reports whereby they might be and are taxed were required of them. They are convinced by past military history and knowledge and the experience of other countries that properly organized pharmaceutical service is essential for the Medical Department of the U. S. Army.

There is a possibility of bringing pharmacy into more active and efficient coöperation with medicine for the common weal of the men in arms. Medical men can convert the possibility into achievement if they are sincerely desirous for the advancement of pharmacy. They have heretofore voiced their support; will they now more activly impress their views and aid in the endeavor to es-

tablish an organized Pharmaceutical Corps as an integral part of the Medical Department of the U. S. Army? Thereby they will advance professional pharmacy —one of their often-expressed desires—and bring into more hearty accord the efforts of physicians and pharmacists in purposes for which they are united, but above all they will render an invaluable service to the soldiers and to the enlisted medical men. E. G. E.

THE PREPAREDNESS OF PHARMACISTS FOR SERVING THEIR COUNTRY.

HERETOFORE references have been made to suggestions and resolutions offered by Branches of the American Pharmaceutical Association, which were of such value that they were subsequently embodied in related war measures.

On May 18, 1917, President Frederick J. Wulling, of the American Pharmaceutical Association, addressed His Excellency, President Wilson, as follows:

MR. PRESIDENT: As president of the American Pharmaceutical Association and with the concurrence of Mr. Lewis C. Hopp, Cleveland, Ohio, chairman of the Council of the Association, I hereby pledge the loyal support of the Association and tender to you and the Government such services as the Association can give in the present crisis of the country. Many of the members of the Association have already offered their individual services, but the Association may be able to give a service as an organization. It is ready and willing to help the country in any way it can and holds itself in readiness to be advised by you or by your orders.

President R. A. Lyman, of the American Conference of Pharmaceutical Faculties, addressed the President in a communication of May 1, 1917, wherein it was more specifically stated how this body could be helpful to the country. The letter reads:

MR. PRESIDENT: The Executive Committee of the American Conference of Pharmaceutical Faculties, representing forty leading Colleges of Pharmacy of the United States, has authorized me to inform you that the services of the schools belonging to this Conference are at your command. This organization wishes to render to the country any and every possible service. Some of the special services which these schools can render are suggested below:

1. The manufacture of pharmaceutical preparations, official or non-official, in such quantities as the Government needs.

2. The microscopical and chemical examination of purchases of crude drugs, for the purpose of identification, and the detection of adulterations.

3. The physiological and chemical standardization of medicinal products.

4. The manufacture of medicinal synthetics.

5. The chemical, microscopical and bacteriological examination of food-stuffs.

6. The supplying of crude medicinal plants, such as Digitalis and Belladonna, which are now on hand, or are now growing in our drug plant gardens. The latter will be available this fall.

7. The growing of crude drugs upon a larger scale than is now attempted and the supplying of information or trained men to those who wish to engage in the cultivation of medicinal plants.

Work along the lines indicated has been done for the Government on quite an extensive scale. Some of the schools offered their teaching and laboratory facilities and extended preparatory courses for those enlisting in the Hospital Service. The Department of Pharmacy of the Oregon Agricultural College directed the collection of native Digitalis by farmers.

At the April meeting of the New York Branch of the American Pharmaceutical Association, Dr. H. C. Lovis, as chairman of the Committee on Military Preparedness of the American Drug Manufacturers' Association, told of the work which has been done by that committee beginning on *February 4, 1916, when* resolutions were adopted by the Association as follows:

WHEREAS, The President of the United States has made an appeal to its citizens on behalf of military preparedness, and

WHEREAS, Adequate military preparedness involves not only the training of citizens as soldiers and the provision of ships, of arms, and of munitions, but also the organization of all the vast industries of the country with a view to their prompt and effective mobilization in case of war, and

WHEREAS, The provision of medical and surgical supplies promptly and in adequate quantities is a most important phase of such preparedness; therefore be it

Resolved, That in the opinion of the National Association of Manufacturers of Medicinal Products* definite plans for the mobilization of all private resources for the manufacturing and delivery of medical and surgical supplies for the Army and Navy of the United States in case of war should be formulated and promulgated at once by the Government; and be it further

Resolved, That the Members of the National Association of Manufacturers of Medicinal products hereby pledge their hearty coöperation in the formulation and promulgation of such plans of mobilization to the end that in the event of war the resources of the United States, for the preparation of medical and surgical supplies, could be made use of by the Government with the least possible delay, confusion and expense.

These and prior editorial comments and the symposium of the New York Branch of the American Pharmaceutical Association on "What the Drug Trade Has Done to Win the War" indicate the possibilities of pharmaceutical service, give an idea of what has been done by the allied interests and emphasize that pharmacists realize the importance of their work and have a vision of things necessary for winning the war that extends beyond the limits of their immediate activities. These same Interests are convinced that a Pharmaceutical Corps is necessary for the U. S. Army.

Write your Congressmen and persuade some of their other constituents, especially those of the medical profession, to do likewise. E. G. E.

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* Now American Drug Manufacturers' Association.

MICROCHEMISTRY OF THE ALKALOIDS OF DATURA.*

BY CHARLES O. LEE.†

Atropine was discovered in roots of belladonna in 1831. As it occurs in commerce it usually contains some hyoscyamine. Atropine appears in the form of white auricular crystals or a more or less amorphous white powder. It is colorless but has a bitter, acrid taste, and gradually assumes a yellowish tint upon exposure to air. It is soluble at 15° C. in 130 parts of water, 3 parts of alcohol, 16 parts of ether, 4 parts of chloroform, 50 parts of glycerin and melts at 115° C., forming a colorless liquid. Atropine volatilizes above 115° C. and condenses into little colorless drops which will crystallize in contact with water, or by the addition of a crystal. Aqueous solutions of atropine are strongly alkaline and as a base atropine forms many soluble salts with acids, solutions of which decompose upon standing. For extemporaneous use, solutions of atropine sulphate may be heated to 100° C. with only a slight decomposition.

Chemical Properties.—Ladenberg who studied the mydriatic alkaloids found that the alkaloids atropine, hyoscyamine, and hyoscine possess a common formula $C_{17}H_{23}NO_3$. Other authorities give hyoscine the formula $C_{17}H_{23}NO_4$. It was found also that these three alkaloids formed salts with gold chloride with varying fusing points. The atropine gold salt fuses at 135° C. The hyoscyamine gold salt fuses at 160° C. and the hyoscine gold salt fuses at 190° C.

Atropine is an ester and on hydrolysis yields a basic substance tropine, a pyridine compound, and optically inactive tropic acid, which is an aromatic acid. Hyoscyamine has been shown to be the ester of tropine with two tropic acids. Atropine therefore appears to be racemic hyoscyamine. Dextro hyoscyamine has also been prepared by the union of tropine with dextro-tropic acid.

Ladenberg obtained hyoscyamine from tropic acid and tropine as he did atropine, hence they must be isomers. In condensing the split products of hyoscyamine, atropine was obtained. Bauer[5] states that atropine is optically inactive but that hyoscyamine is levo-rotatory. Merck saponified hyoscyamine with hot water and got tropine and levoactive tropic acid. This active tropic acid is converted into the inactive state by the action of an alkaline solution. The same will happen with hyoscyamine. If hyoscyamine is melted alone or with small amounts of an alkali it changes to atropine. The change of one isomer into another goes on in alcoholic solution, without interfering with contemporary reactions according to Gadamar. Tunmann[2] also states that hyoscyamine goes over into atropine during the process of extracting from plants.

In his further researches Ladenberg succeeded in converting the inactive tropic acid into the two optical isomers by the aid of quinine salts and with the

*Read by title, Scientific Section A. Ph. A., Indianapolis meeting, 1917. The article also included a classification of alkaloids, their occurrence, general properties and reactions, pharmacological action and therapeutic uses. These divisions are omitted with consent of the author. —EDITOR.

† Purdue University School of Pharmacy, Lafayette, Ind.

synthesis of tropine; hyoscyamine may be made synthetically. Amenomiya got tropine from atropine and by treating tropine with l-tropic acid he got l-hyoscyamine. Bauer[1] considers atropine a tropine of tropic acid. Willstätter synthesized both tropine and atropine as successfully as tropic acid had been synthesized. In 1883 Ladenberg obtained atropine by condensing tropic acid and tropine in the presence of dilute hydrochloric acid, with a yield of 17.7 percent of the theoretical yield of levo- and dextro-hyoscyamine. The former is considered more active than the latter.

Molisch[6] says that hyoscyamine resembles atropine very much and can be easily changed into atropine. He also considers that atropine forms the basis of the Solanaceous alkaloids, and is bicyclic and tertiary and of an alcoholic character. Tunmann suggests that hyoscyamine is the principal alkaloid of this group but goes over into atropine in the process of extraction.

The investigation of Willstätter showed that a similar ring system was at the base of the alkaloids of the tropan group. In 1863 Kraut first split atropine into tropine and tropic acid by boiling it with baryta water. This meant much regarding the constitution of atropine. This splitting of atropine is considered a saponification process in which atropine is considered the ester of tropine and tropic acid. From this the constitution of tropine and tropic acid can be obtained.

Gompel and Henri[14] found that atropine has 3 absorption bands at (λ)—2645, 2580 and 2505, respectively, with general absorption, rapidly below 2493. The three bands are apparently those of the benzene ring replaced at about 30 units toward the red. The remaining benzene bands are marked by the strong absorption of the rest of the molecule. Five milligrammes may be detected in 10 mils of solution.

It has also been found that atropine and hyoscyamine, when treated with anhydrous agents, go over into atropamine and belladonnin, two probable stereoisomeric bases.

PLANTS OF THE SOLANACEAE.

This group of plants includes, *Atropa belladonna*, *Scopola carniolica*, *Hyoscyamus niger* and *Datura Stramonium*.

Alkaloidal Yield—Tunmann suggests that both soil and temperature conditions have a great deal to do with the alkaloidal content of this group of plants, and that there is only little difference in the alkaloidal yield of cultivated and wild plants. In the years 1907 to 1911 Burman obtained, respectively, 0.097, 0.082, 0.045, 0.046 and 0.099 percent of atropine from atropa grown in the same spot. These variations are supposedly due to climatic conditions which he considers affect the alkaloidal yield of plants markedly. It has been found that nitrogen has some relation to the formation of alkaloids in plants. Also tests have been made which show that temperature is a considerable factor and as the temperature increases the percentage of alkaloid decreases, and *vice versa*.

It has been shown that leaves exposed to the sun have somewhat more alkaloid than the shaded leaves. In other cases it is reported to be more abundant in the mesophyll of the leaf and in shaded parts of the plants and deeper tissues.

In cultivated plants of Datura the yield of alkaloid from fertilized soil was 0.342 percent, from the unfertilized soil 0.325 percent. Seeds of these plants yielded, respectively, 0.283 and 0.279 percent of alkaloid. Chevalier reports that the alkaloidal yield was increased by the use of nitrogenous fertilizer.

Feldhaus found in the seed of Datura 0.333 percent of alkaloid, in the root 0.1, in the leaves 0.39, in the stems 0.54, in the corolla 0.439, and in seedling 0.67 percent total alkaloids. In three-year cultivated plants of California, Sayre reports 0.519 percent total alkaloid. The leaves of these plants yielded 0.642 percent, younger stems 0.431 percent, older stems 0.167, roots up to 0.5 and seeds up to 0.8 percent.

The individual differences of the alkaloid yield of the Daturas is small, *Datura stramonium* yielding 0.46–0.55 percent as compared with *Datura tatula* yielding 0.47–0.63 percent.

Ciamician[16] states that the alkaloidal content of Datura can be considerably increased by inoculation with such organic substances as pyridine tartrate, asparigin, dextrose, benzoic acid and quinol.

In hyoscyamus the alkaloidal yield is said to vary greatly, averaging in the fresh leaves about 0.15 percent and in the fresh seeds about 0.30 to 0.50 percent total alkaloids and a yield of hyoscyamine for 0.04 to 0.07 percent.

MICROCHEMISTRY OF THE SOLANACEOUS ALKALOIDS.

Localization.—Atropa, Hyoscyamus and Datura have been studied microchemically. In the main most of the microchemical studies agree.

The seeds have been most thoroughly investigated. Here the alkaloid is found in the storage tissue, the epidermis being alkaloid-free. Barth claims there are only traces of alkaloid in the endosperm and embryo of unripe seed.

Hyoscyamus was investigated thoroughly by Siim Jensen. He reports that alkaloid is found in the epidermis of the ovary, less in the parenchyma and placenta. In the calyx, the parenchyma next to the sieve tubes contains the alkaloid, in the corolla tube it is found in the parenchyma surrounding the vessels. In the leaf the alkaloid was found in the phloem parenchyma and in the mesophyll. In the stem it was found in the parenchyma, the sieve tubes, pith, cortex and wood. In the root the alkaloid was present in the cork layer, the phellogen, phelloderm, phloem parenchyma and pith rays.

In germinating seeds the alkaloid was found in the cotyledons, then in the stalk, the bases of the leaves, then in the entire plant. It appears greatest at flowering time and decreases thereafter.

Since the pith of the flower stalk is richest in alkaloid it is thought that its formation is not dependent upon light. This is contrary, however, to some other theories regarding the effect of light upon alkaloid formation.

Trögelle states that the pollen is free from alkaloid and that the unripe seed is richer in alkaloid than the ripe seed. The pericarp decreases in alkaloid content during fruit formation and the endosperm and embryo are alkaloid-free. The alkaloids of seedlings arise through new formations. Von Anema and Clautriau, in working upon the seeds of Atropa, found the alkaloid between the integument and albumen but never in the albumen or the embryo.

The Solanaceous alkaloids offer good material for the study of the translocation of the alkaloids since they are not confined to any one part of the plant or to any particular tissue. It is thought, however, that they follow the conductive parenchyma. They are also found more abundant near wounded tissue which may strengthen the theory that alkaloids are not only destructive protein products but are also protective substances.

ATROPINE AND HYOSCYAMINE.

According to Putt[18] there would be no necessity for tests for alkaloids other than color reactions if such reactions were always distinctive and satisfactory. In the first place, to get a good color reaction the alkaloid must be relatively pure. Again the amount of material required to perform a series of color tests is often many times greater than the entire available sample. Then, too, many colorations are due to the metallic nature of the reagent rather than to the alkaloid.

In microchemical tests with pure alkaloids Putt recommends the addition of $\frac{N}{10}$ hydrochloric acid before adding the reagent. If a precipitate fails use less reagent or more alkaloid. In all cases, except with iodine solution, use excess of the precipitant. If alkaloidal solutions are concentrated the precipitate is at first amorphous and forms crystals slowly, if dilute, crystals form at once.

REAGENTS.

1. Tenth normal iodine solution.
2. Platinic chloride solution, 10%.
3. Palladous chloride solution, 5%.
4. Gold chloride solution, 1 : 20.
5. Iodine potassium iodide solution, 1 : 1 : 200.
6. Iodine solution, aqueous, saturated.
7. Uranium nitrate solution, neutral, 5%.
8. Phosphomolybdic acid solution.
9. Tannic acid solution, 10%.
10. Mayer's reagent.
11. Picric acid solution, 1%.
12. Picrolonic acid solution, aqueous, saturated.
13. Acid chlorine water solution.
14. Solution of hydriodic acid.
15. Hydrogen peroxide.
16. Hydrochloric acid solution, 0.6 to 1%.
17. Alcoholic solution 50–75% and 95%.

REAGENTS AS REPORTED AND COLLECTED FROM MANY SOURCES.

1. Atropine with $\frac{N}{10}$ Iodine solution first gives a field of minute red, oily globules, which soon form minute crystals of fairly uniform size, with a tendency to form small clusters.

2. Atropine with platinic chloride gives an amorphous precipitate.

3. Atropine with gold chloride forms a precipitate of yellow drops which crystallize upon standing. Behrens says this reaction has no value for microchemical analysis.

4. Alkaloids with simple solution of iodine give a reaction which may be aided by the use of hydrogen peroxide. In this reaction iodoatropin is formed.

5. Atropine with acid chlorine water or hydriodic acid solution gives a brownish precipitate which collects in oily drops, which form monoclinic prismatic crystals in 5 or 10 minutes with yellowish brown to straw-yellowish color. The hydrochloride crystals are 30–60μ and sharply defined with extinction angle of 20° 30′. The hydroiodide crystals are less well formed prisms and are colorless to dark yellow.

6. Atropine with tartaric, oxalic, citric, chromic, and sulphuric acids, crystallizes into short, rhomboid, irregular, six-cornered crystals. With acetic acid and nitric acid spear-like, arrow-pointed crystals develop, often forming oblique crosses. All these salts have a reddish brown coloring, and weak polarization. Of these the nitrates give the most conspicuous and well-formed crystals (Behrens).

7. Atropine salts in neutral solution form a bluish precipitate with iodoplatinate.

8. Atropine from alcohol crystallizes in needle-like crystals, often spear-like and in star-shaped rosettes.

9. Hyoscyamine will crystallize from alcohol in about the same manner as atropine.

10. Many alkaloids are precipitated by a neutral solution of uranium acetate, first as amorphous, then becoming crystalline. Such crystals are insoluble in alcohol and water (J. Alloy).

11. Atropine crystallizes from aqueous alcohol into prisms (Perkin and Kipping).

12. Section of *Atropa belladonna* to which a solution of iodine and potassium iodide has been added after a time gives starlike crystals with a metallic appearance (Molisch).

13. Atropine with solution of iodine and potassium iodide give dark violet-brown crystals with a double refraction but hard to see on account of dark color. Hyoscyamine gave a light brown crystal which showed a distinct double refraction (Feldhaus).

14. Alkaloids give distinctive crystals with saturated solution of picrolonic acid (Schmidt 25).

15. Alkaloids form yellow precipitate as alkaloidal picrates with picric acid.

16. Atropine with phosphomolybdic acid gives a yellowish precipitate (Tunmann).

17. Potassium mercuric iodide gives a whitish precipitate that is hard to see (Tunmann).

18. Bromine water gives small crystals or yellow amorphous lumps (Tunmann).

19. Sections of tissue treated with gold chloride or potassium mercuric iodide then washed with hydrogen sulphide solution, will give a black coloring of the alkaloidal cells (Barth).

20. Crystals of atropine sulphate, chromate, and nitrate are a dark brown color with a strong silvery gleam in reflected light (Behrens).

21. Sodium bicarbonate will not cause a precipitate of atropine from solution except upon long standing (Behrens).

MICROCHEMICAL TESTS UPON ATROPINE, HYOSCYAMINE AND UPON THE ALKALOIDS IN DATURA.

Microchemical tests were made upon atropine and hyoscyamine because they largely represent the alkaloids of the Solanaceae. Datura was selected as the plant for our studies because it contains the alkaloids desired and is easily obtained.

TESTS.

1. Atropine was found to crystallize from solution in absolute alcohol into fan-shaped, feathery-like crystals.

2. Atropine treated with a solution of iodine and potassium gave a precipitate with a yellowish color, which soon formed needle-like crystals (*a*) upon long standing only crystals of potassium iodide remained, (*b*) the same test was made adding a little potassium nitrate solution but plate-like crystals formed indicative of the nitrate together with formation of starlike needles and feathery atropine crystals.

3. Atropine was treated with iodine and potassium iodide solution to which a little hydrogen peroxide had been added. Fan-like feathery crystals together with needle-like crystals in clusters appeared. The addition of hydrogen peroxide seemed to hasten the formation of crystals. Crystals of an entirely different kind resulted when the test was made without the alkaloid.

4. Atropine with HCl and gold chloride gave a precipitate of oily globules which, after a few moments, formed large feathery fan-like crystals, quite stable upon exposure to air.

5. Atropine with hydrochloric acid solution to which iodine potassium iodide was added formed a precipitate of reddish brown globules, which accumulated near the edge of the coverslip and after a few moments formed long, clear crystals and many in rosettes.

6. Hyoscyamine hydrochloride solution treated with iodine and potassium iodide formed a yellowish precipitate which at once formed pale yellow to brownish triangular-shaped crystals. A few were narrower and formed rosettes.

7. Hyoscyamine hydrochloride solution treated with gold chloride gave a yellowish precipitate of oily globules which, after a few moments, formed irregular plate-like crystals.

8. Sections of Datura with hydro-alcohol in many cases resulted in the formation of star-like and needle-like crystals as described for atropine. This test cannot be controlled sufficiently to confirm the crystals as atropine.

9. Section of Datura treated with gold chloride, iodine and potassium iodide, picric acid, uranium acetate, picrolonic acid gave negative results concerning the presence of alkaloids.

DISCUSSION.

In many of the reported tests for these alkaloids, the work has been done upon the alkaloids as groups. Many of the microchemical reactions are reported upon the basis of the pure alkaloid with no confirmation upon the same results by working with plant tissues. The fact that other plant products are precipitated with these reagents makes the detection of the presence of alkaloids in a cell very uncertain, unless confirmatory tests can be made.

In numerous tests upon sections of roots, stems and leaves of Datura we have been able to obtain crystals, corresponding to atropine or hyoscyamine, by treating the sections with hydrochloric solution. Our efforts to prove that such crystals were atropine by use of alkaloidal reagents failed to prove successful, and in each case the crystals found by use of hydro-alcohol were lost when iodine potassium iodide or any other of the reagents suggested was used, but in one or two cases were recovered by hydro-alcoholic solution though in lesser quantities. We believe this was due largely to the presence of much other material in the tissue that tends to take up or possibly disguise the alkaloidal precipitate which undoubtedly, if present, was only in minute quantities.

In our work further we found that atropine crystals were just as readily obtained from sections which had remained in water for 24 hours as from freshly cut sections. Behrens suggests that such tissue should not be allowed to remain in water.

Regarding the localization of these crystals which we termed atropine, they were usually found in the parenchyma cells. If they had any connection or relation to calcium oxalate crystals or cells containing calcium oxalate we were unable to detect it.

These crystals that formed upon treating the sections with hydro-alcohol were markedly distinct from any other crystals in the tissues. They appeared as needle-like crystals pointed at both ends usually; sometimes these appeared as sheaf-like. These crystals while quite regular varied in size in various sections.

CONCLUSIONS.

From our studies we are led to conclude:

1. That alkaloids free from vegetable tissue give microchemical reactions of a very characteristic nature with many of the alkaloidal reagents.

2. That alkaloidal reagents applied to plant tissues, precipitate substances other than alkaloids, making the detection of the presence of alkaloids very difficult.

3. That the reagents that form crystalline precipitates are more satisfactory than those forming amorphous precipitates.

4. That the application of reagents must be made with care, avoiding the use of excess amounts of same because a precipitate cannot be seen if the solution is too dilute.

5. (*a*) That the most successful reagent with plant tissues containing atropine is hydro-alcohol; (*b*) the best results with the pure alkaloids were obtained with alcohol, and solutions of gold chloride and iodine and potassium iodide.

6. That it is possible to determine alkaloid crystals in plant tissue by the use of the polarization microscope.

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EUPATORIUM GLUTINOSUM LAM., AN ADULTERANT OF MATICO, N. F. (PIPER ANGUSTIFOLIUM RUIZ ET PAVON).*

BY CLARE OLIN EWING AND JOSEPH F. CLEVENGER.

NOTE.—During the course of the supervision of crude drug inspection, the Pharmacognosy Laboratory frequently examines new or unusual products, which are of such general interest that it seems advisable to make note of them from time to time. This is especially true at the present time when the unsettled war conditions have demoralized the ordinary channels of trade. With the resulting higher prices there has been a tendency toward increased substitution in the cases of crude drugs which are only obtainable with difficulty.

In the past, references to such products have been included in reports submitted to the American Pharmaceutical Association or the Association of Official Agricultural Chemists, or published by the Chief of the Bureau of Chemistry in his Annual Report, or as separate Press Notices or items appearing in the *Service and Regulatory Announcements* of the Bureau. It is now proposed to publish somewhat more detailed notes regarding adulterants, substitutes, or new products which appear of sufficient importance to justify more extended notice than can be accorded them in the brief reports of publications above referred to.—A. VIEHOEVER.

Among recent adulterations which have come to our attention is one which is especially noteworthy, because of the fact that it illustrates how errors may arise through application of unspecific common names to medicinal plants.

The material in question was offered for importation as "Matico Leaves," a

* Contribution from the Pharmacognosy Laboratory, Bureau of Chemistry, Department of Agriculture, Washington, D. C.

drug obtained from *Piper angustifolium* Ruiz et Pavon (family *Piperaceae*), a plant indigenous to Peru and Bolivia. Examination of the sample showed it to have been derived from another plant growing in the same regions, namely, *Eupatorium glutinosum* Lamarck,[1] a plant belonging to the family *Compositae*. Dragendorff[2] mentions it as one of the matico plants. Wijk[3] refers to it as the "Matico of the Peruvians." The National Standard Dispensatory[4] also states that among "other leaves to which the name (Matico) has been applied are those of *Eupatorium glutinosum* * * *"

At a first glance the leaves have an appearance somewhat resembling those of matico, due to the fact that both species have leaves scabrous and bullate on the upper surface, but comparison with authentic material readily discloses obvious differences. The leaves of *Eupatorium glutinosum* pack together in rather a gummy, spongy fashion, and are much less brittle than those of the recognized matico. The following tabulation shows the most striking characteristics wherein the sample differed from authentic matico:

Matico. *Piper angustifolium* Ruiz et Pavon.	Matico substitute. *Eupatorium glutinosum* Lam.
Leaves:	Leaves:
Alternate.	Opposite.
Margin finely crenulate.	Margin serrate.
Base unequal, oblique, subcordate.	Base cordate.
Venation palmate-pinnate, prominent below.	Venation pinnate.
Upper surface scabrous and finely bullate.	Upper surface scabrous and coarsely bullate.
Lower surface pubescent; simple hairs; glandular hairs absent.	Lower surface very wooly, due to numerous, long, simple, much twisted hairs; numerous short glandular hairs.
Subsessile or short-petiolate.	Petiole one to three cm. long.
Length ten to twenty cm.	Length five to fourteen cm.
Breadth two to five cm.	Breadth one to three cm.
Flowers:	Flowers:
Long spikes.	Cymose-paniculate composite heads.
Fruit:	Fruit:
Drupe, reddish brown; containing reddish brown and distinctly reticulate seeds.	Achene; five-angled, truncate; pappus of numerous capillary scabrous bristles.

Inasmuch as we have been unable to find any data in the literature regarding the chemistry of *Eupatorium glutinosum*, the following data obtained with the meager material at our disposal may be of interest:

The amount of extract yielded to petroleum ether was about 14 percent. This is a large percentage for a leaf drug and, together with the large number of glandular hairs, affords an explanation of the manner in which the sample packed together.

While the presence of alkaloids has never been positively reported in any species of *Eupatorium*, Shamel[5] reports some inconclusive tests for the presence

[1] *Encyclopédie Méthodique Botanique*, II (1876), 408.
[2] *Heilpflanzen* (1898), 9, 661.
[3] *Dictionary of Plant Names*, 1911, I, 521.
[4] Hare, Caspari, Rusby: *National Standard Dispensatory*, 1916, 1007.
[5] *American Chemical Journal*, Vol. 14 (1892), 224.

of an alkaloid in the related species *Eupatorium perfoliatum*. Tests for alkaloids made upon a 5 gramme sample of our material, using Wagner's and Mayer's reagents, gave negative results.

Tannins have been reported in a number of *Eupatorium* species and inasmuch as astringent and haemostatic properties are reported for the recognized matico, it was thought that the presence of tannin in the leaves of *Eupatorium glutinosum*, and their consequent use for similar purposes, might account for the term "Matico" having been applied to them. However, not more than a mere trace of tannin could be detected in an aqueous extract from 25 grammes of the powdered leaves.

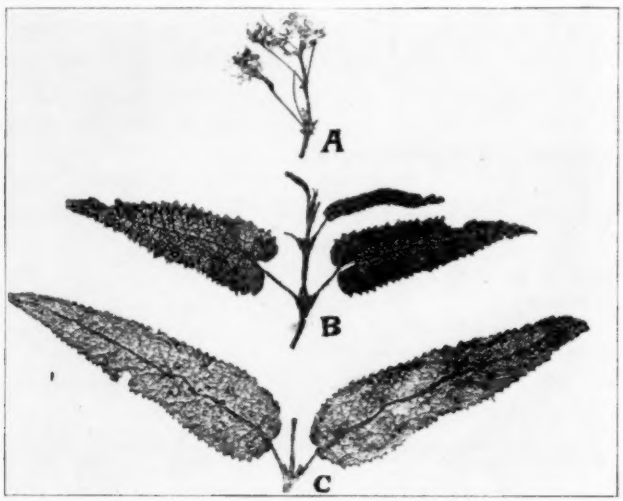


FIG. 1—EUPATORIUM GLUTINOSUM LAM.
A. Inflorescence; B. Upper surface of leaves; C. Lower surface of leaves.

The taste and flavor of the leaves did not closely resemble those of the recognized matico. A steam distillation showed the presence of about 0.15 percent of a volatile oil resembling in odor that of boneset (*Eupatorium perfoliatum*) of the National Formulary IV (1916). When heated, the oil had a strong odor reminiscent of acetic and a higher fatty acid. It is of interest in this connection that Miller[6] reports the presence of acetic and probably another higher fatty acid in the volatile oil of *Eupatorium capillifolium* (Lam.) Small. Unfortunately, the amount of material available was insufficient to obtain the amount of oil necessary for further work.

AN IMPROVED APPARATUS FOR TESTING THE ACTIVITY OF DRUGS ON THE ISOLATED UTERUS.*

BY PAUL S. PITTENGER.

The importance of biologic assay methods as a means of securing uniformity in the action of drug preparations not amenable to chemical standardization is just beginning to be fully appreciated. The incorporation of a chapter on "Bio-

[6] "A Chemical Study of the Oils of Several Species of *Eupatorium*," E. R. Miller, University of Wisconsin, *Bull.* No. 693, p. 1–41 (1914).

* Read before the Scientific Section, A. Ph. A., Indianapolis meeting, 1917.

logic Assays" in the present ninth edition of the U. S. P. is an epoch in the history of standardization and it is to be hoped that with this start a much wider publicity and experience will be gained so that the next Committee of Revision will readily be able to select from the proposed methods and make official the methods which prove to be the most satisfactory and convenient for each drug. Many methods used for the biologic standardization of drugs are not new but merely *quantitative* applications of methods used to elucidate the drugs' physiologic action. The principal task of the biologic chemist, therefore, is the selecting of the most suitable method for the particular drug under consideration.

Second in importance to the selection of the most suitable methods for this work is the *selection and improvement of the apparatus* employed. This is particularly true in experiments upon isolated organs where it is necessary to simulate the normal conditions within the animal from which the organ has been excised. Very often the importance of details of apparatus employed has been lost sight of and only too frequently have papers been written criticizing or condemning methods because concordant results could not be obtained when in fact the principal cause of the non-concordant results was not a faulty method but a *variation in the apparatus employed or in the inexperience of the operator.*

Frequently one operator will read an article on the assay of a particular drug or preparation in which the author of the paper gives detailed descriptions of the apparatus as well as the method employed and without going to the necessary expense and labor of duplicating the author's apparatus will carry out the test suggested on the nearest "thing" which happens to be in the laboratory. After a possible eight or ten experiments a marked variation is found in the results obtained and a paper is written criticizing the original method when in fact due to the difference in apparatus employed the experimenter has never really carried out the original method or performed enough experiments to become sufficiently experienced to pass an opinion upon the subject.

The above comments particularly apply to apparatus employed in making tests upon the isolated uterus. For example, the author in two different papers[1] as well as in his text-book on *Biochemic Drug Assay Methods* describes in detail and recommends an apparatus and method for making *quantitative* determinations of the action of drugs on the isolated uterus. These articles all state that the particular advantage of the apparatus described lies in the fact that the interference with the test produced by spontaneous contractions and increased sensitiveness of the uterus are practically overcome by replacing the Harvard light muscle lever, which was generally employed for recording uterine contractions, by an *escapement wheel and stylet* and the use of the *entire one horn* of the uterus in place of a segment; the free end of the uterus to be attached by means of a silk thread to one side of the wheel while from the other side is suspended a counterpoise bucket for holding shot. It was further explained that "By adding the proper amount of shot to this bucket the operator is enabled to weight the uterus down and thus reduce the amplitude of the spontaneous movements so they can

[1] "The Application of Some Muscular Tissues Adapted to Physiological Standardization." *Monthly Cyclopedia and Medical Bulletin*, Sept. 1913.

"A New Uterus-Contracting Method of Testing Ergot, with Comparison with the Blood-Pressure Method." JOURNAL A. PH. A., July 1914.

be controlled. Thus, the marked spontaneous contractions can be reduced until the uterus is just able to contract under the increased load or, in other words, shot is added until the maximum amount of work that the uterus is normally capable of performing is counterbalanced. Any increase in the amplitude of the contraction after the addition of a given drug can now be produced only by that drug." It was also suggested that the uterus be suspended in a cylinder containing about *250 mils* of Loche's solution.[2]

Several workers later claimed that Pituitary Extract could not be satisfactorily assayed by the uterine method because of marked spontaneous contractions present normally in many uteri and of the increased sensitiveness after a few doses of the drug. After an investigation the writer discovered that the authors of these criticisms had employed the "old style" isolated uterus apparatus consisting of a Harvard light muscle lever and a muscle warmer of about 40 mil capacity when the link between success and failure in carrying out *quantitative* tests upon the isolated uterus lies in the use of an *escapement wheel and bucket* for shot and the suspension of the entire one horn of the uterus in a relatively large quantity of Loche's solution preferably about 250 mils.

The above comments are made before describing the apparatus which forms the subject of this paper in order to bring out the point that in biologic assays where the most accurate *quantitative* results are desired it is just as essential to pay attention to details and strive to improve the apparatus as it is to improve the methods themselves. The form of apparatus recommended for a particular test is as much a part of the method as the animal employed.

Fortunately, in the majority of cases the foregoing statements do not apply to workers who have given the subject serious thought and have devoted a considerable amount of time to practical experimental and research work, in an endeavor to improve and determine the limitations of the various methods proposed, but to those who devote practically all of their time to allied subjects and merely dabble in biologic standardization.

The former all agree that wonderful strides have been made within the last few years and that the value of physiologic standardization as a means of securing *uniformity* in the strength of drugs and their preparations can not be over-estimated. The importance of this work is admirably set forth by Vanderkleed[3] in the following words:

"Is it after all so necessary, so important, that preparations of digitalis, ergot, pituitary, etc., be standardized? In answer to that I would only say that we must all agree that it is the duty of our profession to render the best service to humanity of which we are capable. Now if we did not know that preparations of potent drugs like digitalis, strophanthus, ergot, etc., vary hundreds of percent in activity, when prepared indiscriminately and without physiologic control, we might be justified in continuing to market such variable products with the hope that after all the physician will be able to feel his way—and in many cases succeed in hitting the bull's eye, even with the handicap of poor weapons. But now that, thanks to pharmacodynamic investigation, we do know that digitalis tinctures or ergot fluidextracts may, and often do, without such control, vary

[2] "Biochemic Drug Assay Methods," pages 73 to 82.

[3] "Physiologically Standardized Pharmaceuticals," by C. E. Vanderkleed, read before Ohio Pharmaceutical Association, July 1916.

all the way from practical inactivity to several times the normal strength, I personally feel that I could never conscientiously send out any such preparations unless I knew it had been physiologically tested and standardized."

It is gratifying to note that practically all objections made to physiologic assay methods are of the same general order, *i. e.:*

"Is the sample of drug that has been found to possess the greatest power to kill a cat the one that will prove the most efficient in curing a man?"

"Is the physiologic effect of the drug that is measured the one that gives it its therapeutic value?"

"The result of the assay depends upon *toxic* effects."

"The animal chosen is biologically much different than man."

"How can we calculate from the amount of drug necessary to produce a certain effect upon a dog how much will be required to produce the same effect upon man?"

The above questions clearly indicate a lack of conception on the part of these critics of the real purpose of the physiologic test, namely, to secure *uniformity.* The determination of the real value of a drug in the treatment of disease in man is another matter entirely. It is not the object of Biologic Standardization to attempt to show from the effect of a certain drug upon the cat how it will act upon man; or to calculate from the amount of drug necessary to produce a certain effect upon the dog how much will be required to produce the same effect upon man; or from the amount necessary to kill a guinea-pig how much will kill a man. These are all questions which concern the experimental physiologist and not the physiologic assayist except indirectly. Biologic assays are recommended in the U. S. P. IX only for drugs of *well-known physiologic effect and therapeutic efficiency.* It is not the object, therefore, to attempt from the results of our experiments on cats or dogs to tell the practitioner how these drugs will act on man because he knows the effects of these drugs from the results of thousands of clinical tests *on man.* Neither is it the intent to tell the practitioner how much tincture of digitalis, for example, will be required to produce a certain effect on man from the amount which produces the same effect on frogs or guinea-pigs because the practitioner's experience has taught him the proper dosage of these well-known drugs. As before stated, the sole object of biologic assaying is to devise and perfect methods whereby it is possible to produce *uniform* preparations. Therefore, if we always adjust a preparation to the same strength upon the same animal it will always produce the same effect upon man regardless of the relation between the two. Obviously, however, some more or less definite ratio must be shown to exist between the result obtained from the physiologic test and the therapeutic activity of the preparation, but to claim that because a frog is not comparable to a man, it should not be employed in physiologic testing, is as illogical as to deny that a chemical assay is of value because a chemical balance and a set of weights are not related to the human circulatory system.

To return to the subject of the paper, the author in his text-book and two papers previously mentioned describes in detail an apparatus and method for testing the activity of drugs upon the isolated uterus. A brief description of this apparatus follows:

The uterus is suspended in about 250 mils of Loche's solution contained in a cylindrical glass vessel (*G*) (Figure 1), the lower end of which is plugged with a rubber stopper (*O*) having a central bore. Through the latter passes one arm of a

wide glass "T" tube (*J*) which ends flush with the upper surface of the stopper, so that the cylindrical vessel may be completely emptied. This tube passes through a second rubber stopper (*L*) which fills an opening in the bottom of an outer metallic vessel (*F*) which forms a constant temperature water jacket.

The temperature of the water in the jacket is kept constant by means of a metallic rod (*E*) which penetrates the wall of the jacket, passes through the water, and is soldered to the opposite side of the jacket. The portion of the rod external to the jacket is heated by a protected Bunsen burner (*C*) which slides on the rod. The temperature is regulated by sliding this burner backward and forward until that point is reached where the amount of heat transmitted by the rod to the water inside is sufficient to keep the thermometer (*T*) suspended in the water at the proper degree (38° to 39° C.).

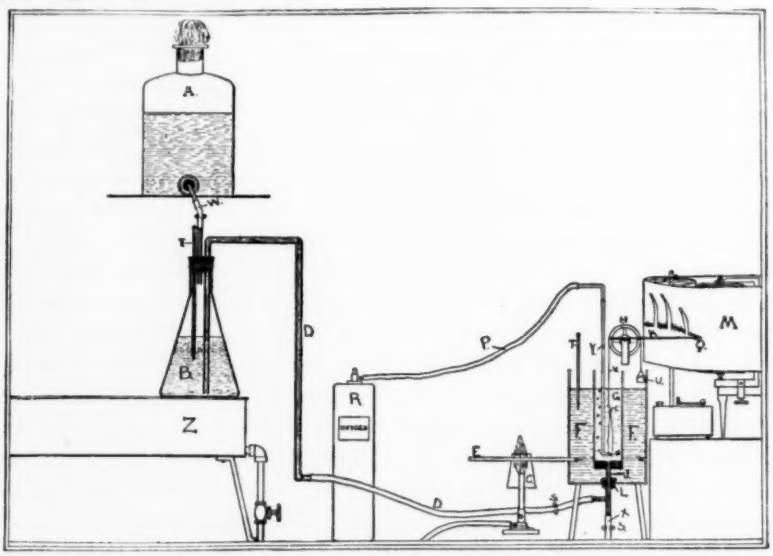


FIGURE 1.—A graphic drawing of the original apparatus and will serve to illustrate the description given in text.—From Pittenger's "Biochemic Drug Assay Methods."

One of the other arms of the "T" tube is connected by a rubber junction (*X*) armed with spring clamps (*S*) to a waste pipe by which the cylindrical glass vessel may be emptied.

The remaining arm is connected by a syphon tube (*D*) to a flask (*B*) which holds a small amount of Loche's solution for refilling the cylindrical vessel. This flask is kept at a temperature between 40° and 45° C. by means of a steam bath (*Z*). The main supply of Loche's solution is contained in a large aspirator bottle (*A*) connected with the small flask by a rubber tube (*W*), the object being to avoid exposing the reserved solution to prolonged heat. Heat causes Loche's solution to gradually decompose and lose CO_2.

The Loche's solution in the small flask should be reduced to 39° C. immediately before admitting it to the cylindrical vessel by allowing sufficient cold solution to run into it from the aspirator bottle.

Into the cylindrical vessel containing the Loche's solution dips a narrow glass tube (*Y*). This tube is turned at right angles about half an inch from its lower end. Into this is sealed a platinum pin (*N*) for attaching the *lower end of the isolated uterus*. The upper end of this tube is connected by means of rubber tubing (*P*) to an oxygen reservoir (*R*). A constant stream of oxygen is allowed to bubble through a small vent at the lower end of the tube, thus preserving the muscular irritability of the uterus and at the same time stirring the Loche's solution.

The other end of the uterus is fastened to a small platinum hook (*I*) connected to a silk thread (*V*) which passes over an escapement wheel (*H*) and is attached to a pin on the opposite side of the wheel. A counterpoise bucket for holding shot (*U*) is attached to the opposite side of the wheel. To this wheel is soldered a stylet of aluminum (*K*), the axle of the wheel serving as a fulcrum. To the end of this stylet a pen point is fixed (*Q*) for recording the contractions of the uterus on the revolving drum of the kymograph.

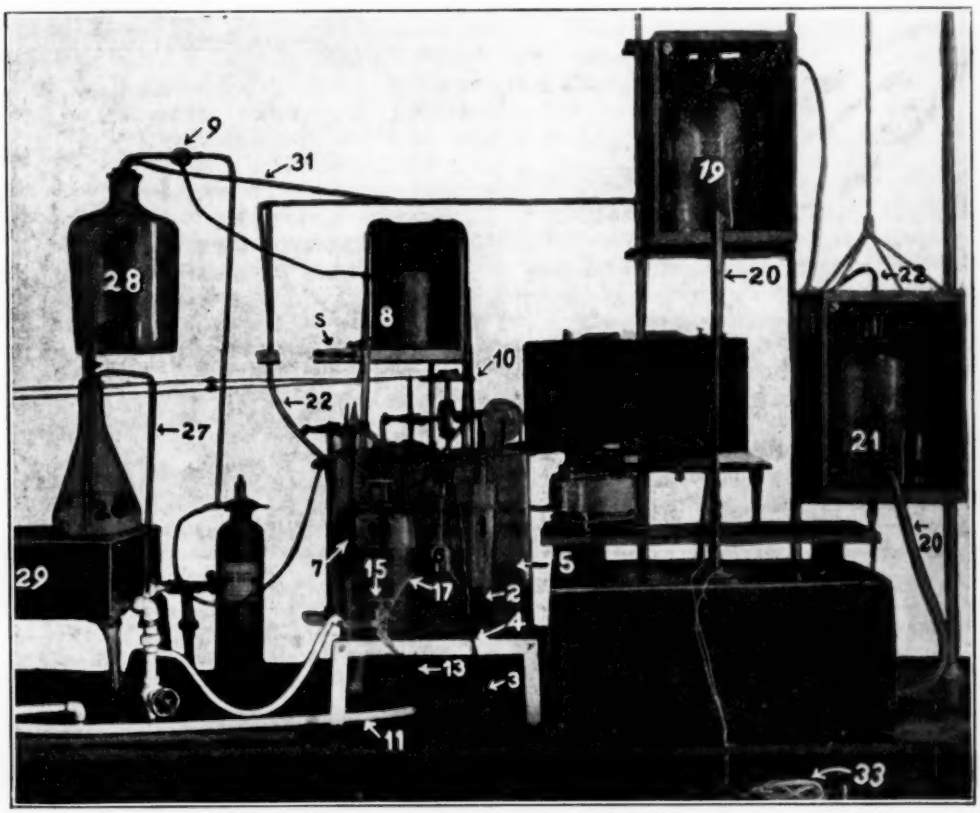


FIGURE 2.—Improved apparatus for testing the activity of drugs upon the isolated uterus.

This apparatus was in continuous use in the laboratory for two and a half years and gave very satisfactory results in testing Ergot and Pituitary Extracts. During this time, however, its limitations were carefully studied with the result that several details were noted in which marked improvements could be made.

First. The uterus was subjected to more or less shock at times due to the fact that it was impossible to always have the temperature of the Loche's solution in *B* at exactly 38° C. the instant it was necessary to use the same for refilling *G*. It was thought advisable, therefore, to make the constant temperature bath *F* of sufficient capacity to accommodate the bottle containing the warm Loche's solution for refilling *G*. With this stock solution in the same water bath as the cylinder containing the uterus it must necessarily be of the same temperature and thus produce no shock to the uterus when the drugged solution is run off and fresh solution run in.

Second. The metal tank was replaced by glass which enables the operator to observe to a better advantage the rate at which the oxygen is flowing, the amount of solution in stock bottle and the temperature of the bath.

Third. The brass rod and bunsen burner for heating the water in bath was replaced by an electric immersion heater, the temperature of the water being automatically regulated by means of a toluol-mercury thermostat or an Eberbach Bimetallic electric thermo-regulator.

Fourth. The escapement wheel was improved so that the writing point can be raised or lowered without destroying the tension on the uterus or changing the clamps on the stand.

Fifth. An elevator was added to accommodate two aspirator bottles of water for furnishing air pressure to force the Loche's solution from the stock bottle into the cylinder containing the uterus.

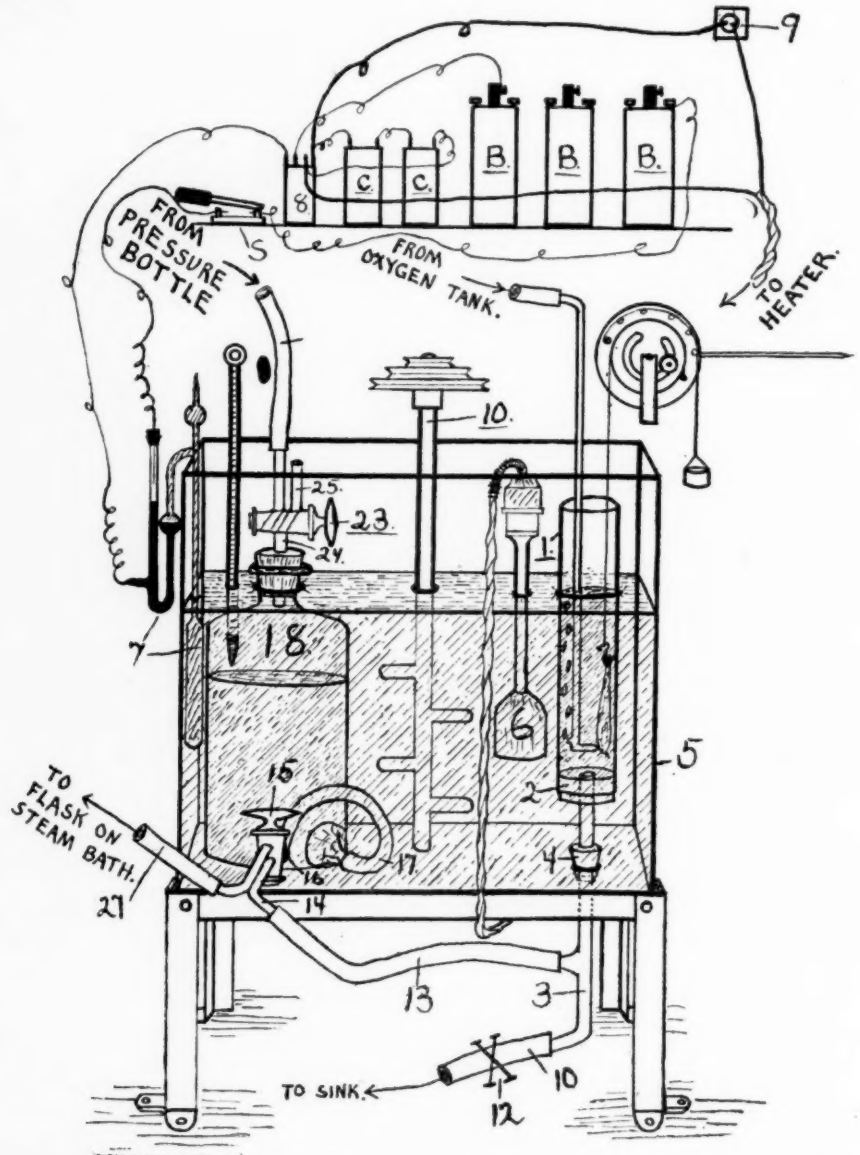


FIGURE 3.—Graphic drawing showing the arrangement of apparatus within the constant temperature bath and method of connecting batteries (*B*), condensers (*C*) and relay (*8*) with the thermo-regulator (*7*) and heater (*6*).

The complete improved apparatus is shown in Figure 2. Figure 3 is a graphic drawing showing the arrangement of the stock bottle, thermostat, heater, cylin-

drical vessel and stirrer, within the constant temperature bath. The labeling of corresponding parts is the same in both figures and will serve to illustrate the following detailed description:

The uterus is suspended in about 250 mils of Loche's solution contained in a cylindrical vessel (*1*), the lower end of which is plugged with a rubber stopper (*2*) having a central bore. Through the latter passes one arm of a wide glass "T" tube (*3*) which ends flush with the upper surface of the stopper, so that the cylindrical vessel may be completely emptied. This tube passes through a second rubber stopper (*4*) which fills an opening in the bottom of the outer glass vessel (*5*) which, when filled with water, forms a constant temperature water bath.

The water in the bath is heated by means of a "Universal" electric immersion heater (*6*). The temperature of the water is automatically kept at 38° C. by means of a toluol-mercury regulator (*7*) which makes and breaks the circuit from the batteries (*B*) to the relay (*8*) which in turn makes and breaks the electric current (110 or 220 volt) from plug (*9*) to the heater. The heat is evenly distributed throughout the water by the stirrer (*10*) which is driven by a small water or electric motor. The condensers (*C*) are used to prevent sparking when the relay (*8*) makes and breaks the electric current and thus prevents the contacts from burning off. For a 110-volt circuit only one condenser is necessary.

One of the other arms of the "T" tube is connected by a rubber junction (*11*) armed with a spring clamp (*12*) to a waste pipe by which the cylindrical glass vessel may be emptied.

The remaining arm is connected by rubber tubing (*13*) to one branch (*14*) of a "3-way" stopcock (*15*). One of the other branches of the stopcock passes through a rubber stopper (*16*) which fills an opening in the side of the glass water jacket. The end of this branch projects on the inside of the water jacket and is connected by means of a rubber tube (*17*) to the outlet of aspirator bottle (*18*) which contains unmedicated Loche's solution. Therefore, when the stopcock is turned to the proper position the unmedicated solution from the aspirator bottle (*18*) is forced through the connections just described by air pressure into the cylindrical vessel (*1*) containing the uterus.

The air pressure is supplied by allowing water to flow from an elevated aspirator bottle (*19*) through rubber tubing (*20*) into lower aspirator bottle (*21*). The air thus compressed above the liquid in the lower aspirator bottle is lead by means of pressure tubing (*22*) to the one branch of a "3-way" stopcock (*23*). One of the other arms of the stopcock (*24*) passes through a rubber stopper which tightly fits into the neck of the aspirator bottle (*18*) containing the Loche's solution. The remaining arm (*25*) of stopcock (*23*) permits air to escape when aspirator bottle (*18*) is refilled from flask (*26*) on steam-bath by means of siphon tube (*27*).

It will be noted, therefore, that when stopcocks numbers (*15*) and (*23*) are turned to the proper position the air pressure passes through stopcock (*23*) and forces Loche's solution from bottle (*18*) through tubing (*17*), stopcock (*15*) and tubing (*13*) to cylindrical glass vessel (*1*) containing the uterus. When the two stopcocks are turned in the opposite direction the Loche's solution in flask (*26*) siphons through tubing (*27*), stopcock (*15*) and tubing (*17*) and refills bottle (*18*) while the air in (*18*) escapes through stopcock (*23*).

The flask on the steam bath (*29*) is kept at a temperature between 40 and 45° C. A supply of Loche's solution is kept in the large aspirator bottle (*28*) connected with the flask by a rubber tube armed with a screw clamp, the object being to avoid exposing the reserved solution to prolonged heat. The Loche's solution in the flask is reduced to approximately 39° C. before siphoning into bottle (*18*) where the water bath adjusts it to exactly 39° C.

The neck of the large aspirator bottle is closed by a tight-fitting rubber stopper, through which pass two glass tubes. The one tube (*30*) is connected with a 20,000 mil bottle underneath the table which contains the reserve sterile Loche's

solution while the other (*31*) is connected with a water vacuum pump. Thus, by merely turning on the water to the pump the large aspirator bottle (*28*) is refilled with the sterile solution from the reserve bottle underneath the table without exposing the same to the air.

The method of suspending the uterus, supplying the oxygen and recording the contraction, are the same as with the original apparatus (see page 515) except that a marked improvement has been made in the construction of the escapement wheel.

It often happens that after suspending a uterus in the oxygenated Loche's solution it will relax to a greater extent than was expected by the operator and the writing point will fall below the smoked paper. Occasionally a uterus will make apparently normal contractions and react readily to the drug, but after two or three doses will suddenly relax to a much greater extent and establish a new normal far below the original. It is not convenient to lower the paper on the double drum kymograph to bring the writing point into proper position.

In the above cases it was necessary, therefore, with the original apparatus, to either shorten the thread which attaches the uterus to the wheel or to lower the tube to which the lower end of the uterus is attached. Both of these methods destroy the tension on the uterus and spoil the tracing.

The wheel on the improved apparatus consists of two parts (*A* and *B*, Figure 4). (*A*) is soldered to the axle while (*B*) is free and may be rotated independent of the axle. The stylet and writing pen are also soldered to (*A*). In (*B*) there is a

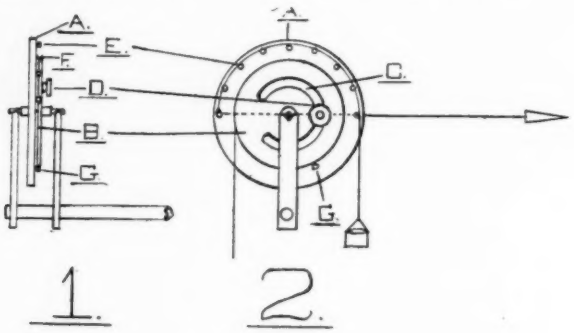


FIGURE 4.—Shows the construction of the improved escapement wheel. 1. Side view. 2. Front view.

crescent-shaped perforation (*C*) through which passes a small rod. The one end of this rod is soldered to (*A*) while the other end is threaded and supplied with a thumb nut (*D*) which when tightened acts as a set screw and holds *B* in any desired position. *A* is also supplied with a series of small pegs (*E*) which support the thread holding the bucket for shot. The rim of (*B*) contains a small groove (*F*) in which the thread from the uterus passes around the wheel. The end of this thread is fastened to a small peg (*G*).

This construction makes it possible, by simply loosening the thumb screw and holding (*B*), to rotate (*A*) and thus raise or lower the writing pen without moving (*B*) or disturbing the tension on the uterus. After adjusting the pen to the desired position the thumb screw is tightened and the wheel again acts as if it were constructed of but one piece.

Figure 5 shows the construction of the toluol-mercury thermostat. That portion of the glass tube which is lightly shaded represents toluol (*1*) and the black

portion (*2*) represents mercury. The platinum point of battery wire (*6*) is so arranged that it may be raised or lowered through stopper (*9*) and is connected directly with the zinc pole of the dry batteries. The platinum end of battery wire (*5*) is constantly in contact with the mercury and the other end is connected to one "battery pole" of the relay. The other "battery pole" of the relay is connected with the carbon pole of the batteries thus completing the circuit when the relay is closed. The relay must be of the type which breaks a contact when the battery circuit is closed by the thermostat and makes the contact when the battery is broken. The switch (*S*) in Figure 3 is to disconnect thermostat when not in use in order to save batteries.

In order to adjust the thermostat so that it will throw the relay at a given temperature, say, for example, 39° C., it is only necessary to place the bulb (*1*) in the water bath, bring the temperature of the water to exactly 39° C. and adjust battery wire (*6*) so that it merely touches the surface of the mercury. After connecting with the relay, condensers and batteries, this apparatus will then automatically keep the water in the bath at a uniform temperature of 38.5 to 39° C. as follows:

Arrange the apparatus as shown in Figure 3; regulate thermostat as already outlined under Figure 5; start stirrer (*10*); close switch (*S*) and insert plug (*9*) in socket.

The heater produces a gradual increase in the temperature of the water which causes the toluol in the thermostat to expand and the mercury to rise. When the temperature of the water reaches exactly 39° C. the mercury touches the platinum point of wire (*6*), which completes the battery circuit and allows the current from the batteries to run through the coil of the relay, thus forming an electro magnet which lifts the armature of the relay and in turn breaks the contact which stops the strong current from passing to the heater from socket (*9*).

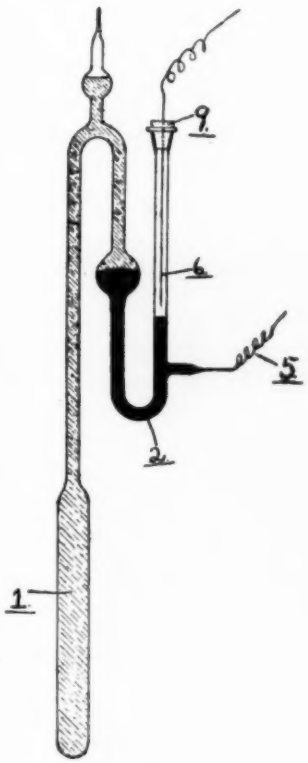


FIGURE 5

With the gradual lowering of the temperature of the water the Toluol contracts and causes the mercury to fall away from the platinum wire (*6*), thus breaking the battery current which is passing through the relay. This break allows the armature of the relay to fall away from the magnet and make the contact which allows the strong current to again pass from the socket to the heater. The heater gradually increases the temperature of the water until at 22° C. the mercury in the thermostat again makes a contact and the whole operation repeats itself. The toluol-mercury regulator, relay and batteries may be replaced, if desired, by an Eberbach bimetallic electric thermo-regulator.

The aspirator bottles (*19* and *21*) for furnishing air pressure are of eight-liter capacity and are placed in the small boxes which form the carriages of the elevator which may be raised or lowered by means of a rope passing over pulleys

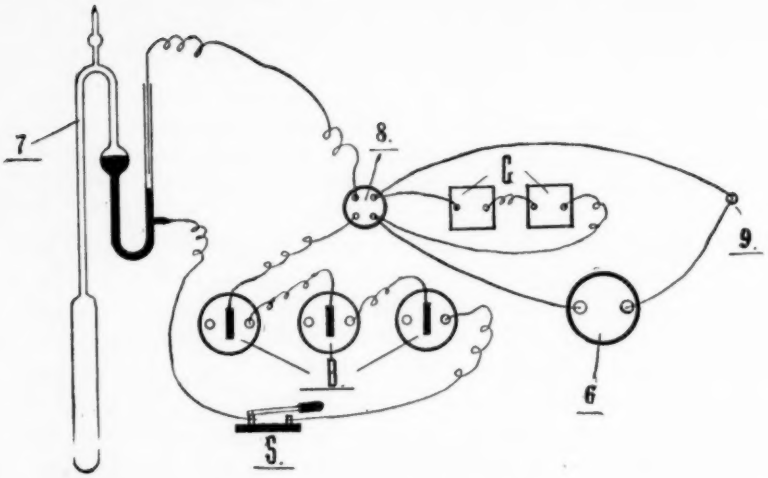


FIGURE 6.—Shows method of connecting thermostat (*7*); relay (*8*); condensers (*C*); batteries (*B*); switch (*S*) and heater (*6*) with the electric plug (*9*).

underneath the table to an awning cleat (Figure 2, *33*) which serves to hold the elevators at any desired position. The method of connecting these bottles and carrying the air pressure to the small aspirator bottle in the water bath is shown by Figure 7.

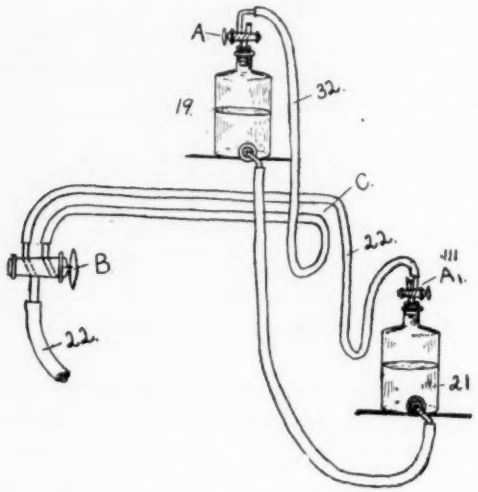


FIGURE 7.—Shows method of connecting aspirator bottles for making air pressure.

It will be noted that each bottle is closed by a rubber stopper containing two holes. One hole of each stopper is fitted with a glass stopcock (*A* and *A-1*) while through the other hole of each stopper passes a glass tube which in turn is attached to rubber pressure tubing (*22* and *32*) leading to two arms of a "three-way" stopcock (*B*). The other arm of the stopcock is connected by pressure tubing (Figs. 2, 3 and 7, *22*) with the small aspirator bottle in the water bath.

The pressure tubes (*22*) and (*32*) are fastened to the wall at a point (*C*) midway between the upper and lower bottle and are of sufficient length to permit the free movement of the bottles from the upper to the lower position.

With the above arrangement the stoppers may be "wired in" and when all the water has passed from the upper to the lower bottle it is only necessary to reverse the position of the two bottles and the three stopcocks. The stopcock in the upper bottle should be open and the one in the lower bottle should be closed. The "three-way" cock should be turned so that the tubing (*22*) is in direct connection with the air pressure in the lower bottle. With the old method in which the neck of the lower bottle alone is supplied with a stopper and tubing it was necessary to change the stopper and tubing from one bottle to the other each time the positions of the bottles were reversed.

In conclusion, I would state that when an *escapement wheel and counterpoise bucket*, as described in Figure 4, is employed and the *entire one horn* of the uterus is used much more active quantitative results are obtained than when only a slender segment is taken and attacked to a light heart lever.

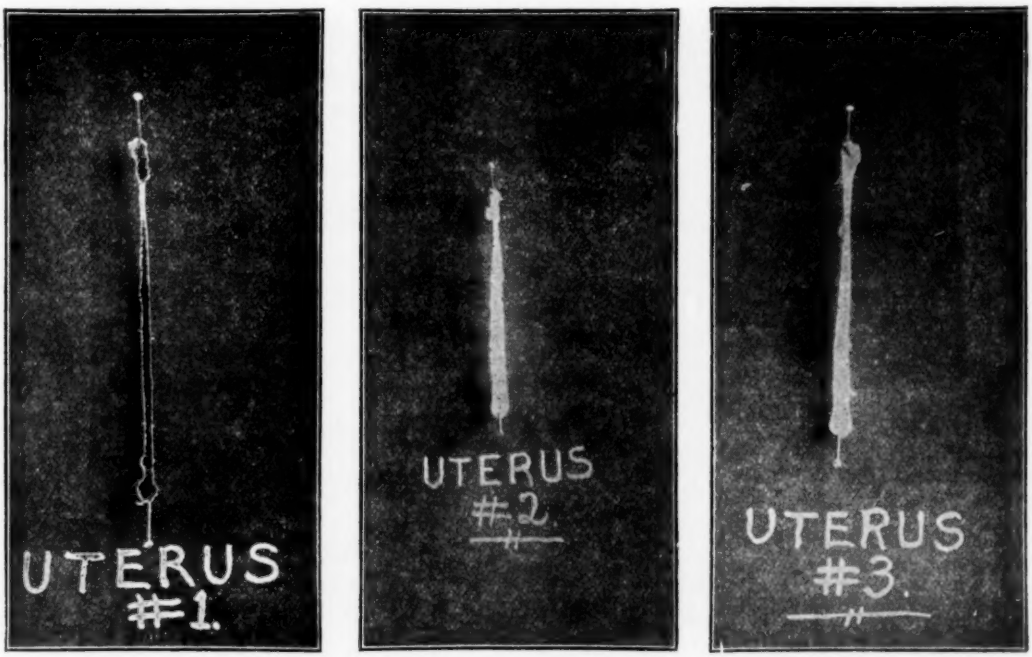


FIGURE 8.—Illustrates the variation in muscular structure in different uteri. The above uteri were all taken from guinea pigs weighing from 280 to 320 grams.—From Pittenger's "Biochemie Drug Assay Methods."

Only sensitive uteri, however, should be employed as different uteri vary greatly in their mutual relation and to power and muscular structure (see Figure 8). Some specimens are greatly deficient in muscular substance and act feebly while other specimens show greater muscular development and contract strongly. Some specimens prove absolutely inert and will not respond at all. The normal activity, however, practically runs parallel with the amount of muscular tissue present; the "stringy" uteri like No. 1 (Figure 8) are all deficient in normal ac-

tivity and in response to stimuli, while the thick, more muscular uteri are practically all active and sensitive. This knowledge enables the operator to save considerable amounts of time, as it renders it possible for him to distinguish between active and inactive uteri before connecting them with the apparatus.

PHARMACODYNAMIC LABORATORY,
H. K. MULFORD COMPANY,
AUGUST 1, 1917.

WATER DROPS AND WATER DROPLETS.

BY A. B. LYONS.

There has been much discussion regarding a standard dropper for accurate measuring of small quantities of fluid. It has been shown that the size of the drop depends—other things being equal—on the diameter of the delivery tube at its orifice, and that when that diameter is 3 millimeters the dropper will deliver at standard temperature 20 drops of distilled water to the mil.

Obviously the usefulness of such a dropper would be very limited, since for different liquids, including aqueous solutions of different substances, the count of the drops per mil varies greatly. We have indeed occasion often in the laboratory to measure small quantities of a liquid by drops, but for such purpose we use an ordinary pipette, ascertaining by experiment how many drops per mil it will deliver of the particular liquid we propose to measure with it. Even so, we make our measurement only from the middle third of the pipette, or from the enlarged portion of the same.

In the use of such extemporized standard droppers we have been accustomed to keep in mind the effect of temperature on the size of the drops, using them only at temperatures not more than 5 degrees centigrade above or below that at which the dropper was standardized. Inasmuch, however, as the quantities measured in this way are never large, the effect of temperature, even in cases where the coefficient of expansion is large, is almost negligible as long as measurements are made at room temperature.

There is, on the other hand, an important possible cause of variation in the size of drops delivered from a pipette or dropper which has been very generally overlooked. This is *the character of the atmosphere in which the drop is formed.* The important factors governing the size (*i. e.*, the weight) of the drop are the surface tension of the fluid and the attraction between the fluid and the surface with which it is in contact. The first of these factors may be influenced enormously by the presence in the atmosphere of certain gases or vapors.

A few simple experiments will illustrate. Deliver into an empty flask from a pipette a certain volume of water, measured by the interval between two fixed lines on the pipette, counting the drops. Now put into the flask a little ether and repeat the count. The number of drops will be more than twice as great as in the first experiment. If the flask contains some strong alcohol the number of drops will be 25 or 30 percent greater than when it is empty, or contains only water. You are no longer getting standard drops, although the pipette is delivering the same fluid as before—contaminated at most with no more than a trace

of foreign substance. You may call them droplets if you choose, but as units of measure they have ceased to have value.

It is not necessary to go into detail, showing precisely how much variation is occasioned by this or that particular vapor. Little or no practical use could be made of such data. The important thing is to keep in mind the possibility of such disturbing influences in any use made of the dropper for exact measurements.

HYDROGENATED OILS AS FUTURE OINTMENT VEHICLES.*

BY ERNEST R. JONES.

INTRODUCTION.

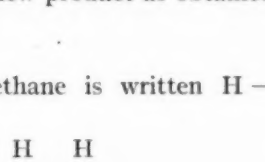
For many years oil chemists had been searching for a simple means of changing oleic acid into stearic acid in order to convert relatively cheap raw material into more valuable fats.

While the matter would seem very simple because of the closeness of their empirical formulae, *i. e.*, $C_{18}H_{34}O_2$ or oleic acid and $C_{18}H_{36}O_2$ or stearic acid, a difference of only two hydrogen atoms, it was not until a suitable hydrogen carrier or catalyzer was found at the very close of the nineteenth century that the changing of oleic acid into the harder stearic acid was commercially accomplished. A German patent in 1901 is probably the first one recorded having to do with the reduction of organic bodies by hydrogen in the presence of nickel catalyzers. Since that time many improvements and patents have followed rapidly.

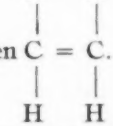
It is not the intention of this paper to go into the technique and processes used for the hydrogenation of oils and fats, but briefly, the process consists of converting a soft fat or oil into a harder one by causing the unsaturated acids or glycerides to take on more hydrogen. To do this the fat is heated in a suitable container to about 160° C. (temperature varies in different processes) a suitable catalyzer is added, usually a salt of nickel or palladium, or the finely divided metals themselves, and hydrogen is run in under pressure, the process being continued for several hours or until the desired degree of hardness is obtained. The catalyzer is then filtered out, the product cooled and is ready for use unless further bleaching or deodorizing is desirable.[1]

CHEMISTRY OF PROCESS.

Although the hydrogenation process is essentially one of reduction it will be easier understood if we consider the new product as obtained by "addition." To explain—the graphic formula for ethane is written



The graphic formula for ethylene is written



It will be noticed that in the latter

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* Read before Detroit Branch A. Ph. A., April meeting, 1918.

[1] For a more extended discourse on these processes see "Hydrogenation of Oils," by Ellis.

compound the linkage between the two carbon atoms is double whereas in the former compound the linkage is single. Compounds in which the linkage between the carbon atoms is single are called "saturated" compounds and can only form new compounds by "substitution," that is by substituting a different atom or group of atoms for one of the H atoms which is present.

A double bond or linkage in the structural formula of any compound, as in ethylene, is merely a convenient expression of certain facts which have been established experimentally, namely, that the compound is "unsaturated" and has the power of combining directly with certain other atoms or groups. In such cases the double linkage between the carbon atoms is changed to single and the new compound is said to have been formed by "addition."

Compounds which are unsaturated are the only ones then which are susceptible to hydrogenation. Thus its application to fats, now that suitable catalyzers have been found, is limited to those which contain unsaturated acids or glycerides.

Oleic acid, formula $CH_3.(CH_2)_{14}.CH : CH.COOH$, is a familiar example of an unsaturated acid. (Note the double linkage indicated by the two dots.) Therefore it is capable of being hydrogenated or converted into stearic acid, which is a saturated acid. The following equation represents the change which takes place:

$$\underset{\text{oleic acid}}{C_{18}H_{34}O_2} + H_2 = \underset{\text{stearic acid}}{C_{18}H_{36}O_2}$$
$$282 + 2 = 284$$

From the molecular weights you will see that 282 pounds of oleic acid will yield 284 pounds of stearic acid by the addition of two pounds of hydrogen.

As the individual molecules of oleic acid are changed to stearic acid they of course exhibit the properties of that acid. The chief physical difference between oleic and stearic acids is that the former is a liquid and the latter a solid. If the process of hydrogenation is carried to completion, a hard, solid stearic acid would result on cooling, but as the process is entirely within our control we may stop it when any desired consistency has been obtained. This brings the possibility of using these fats for pharmaceuticals close to our own doors and one which we are not yet alive to the advantages obtainable. In pharmacy we have little use for either oleic or stearic acids, but the glycerides of the acids, namely, olein and stearin, are natural constituents of every fat or fixed oil we use in ointments, and this is where they seem destined for a great future use, in my opinion, as the glycerides can also be hydrogenated and thus yield us an entirely new set of ointment vehicles devoid of some of the objections of the present ones.

AN APPLICATION TO PHARMACY.

The most unsatisfactory ointment which pharmacists have to dispense is Zinc Oxide Ointment, U. S. P. In a paper, which I read before the A. Ph. A. convention in Detroit in 1914, it was plainly shown that the granulation and unsightly appearance of this ointment was due to the physical characteristics of the lard and could not be corrected. A hardened petrolatum vehicle was suggested and the Section on Pharmacopoeias and Formularies passed a motion suggesting that such a change be made in the U. S. P. IX formula for this ointment. The

sub-committee on ointments rejected the suggestion saying that "leading dermatologists favored the retention of the old formula." The reason was because benzoinated lard is absorbed by the skin, whereas petrolatum is not or only very slow. I doubt whether this ointment is intended to be absorbed when used, but that is a question of therapeutics which we will not consider at this time. If we can supply a substitute for lard, which will satisfy dermatologists from the standpoint of absorption and satisfy pharmacists at the same time, such a move would seem desirable to every fair-minded person. Such a thing can be accomplished with a hydrogenated cottonseed oil vehicle stiffened with wax as I have samples here to prove. These samples are all from two to four years old, have been kept at room temperature and are as perfect as when made.

It is not the intention of this paper to recommend any particular manufacturer's hydrogenated products, but as Crisco, a hydrogenated cottonseed oil, is quite a popular article particularly in the home, the experiments were conducted with that product. If such a product were marketed under a scientific name indicating its composition, it would, of course, be more desirable for our work. Also Crisco is a little too soft to replace lard entirely in our ointments and is open to the further objection that when melted alone it cannot be cooled to a smooth product by any practicable means. If the hydrogenation process were carried further these deficiencies could probably be eliminated. For this reason, I found it necessary to use wax to stiffen the ointments, which at the same time gives a smooth product.

The following formula is proposed:

Zinc oxide	200 Gm.
White wax	125 Gm.
Hydrogenated cottonseed oil (Crisco)	675 Gm.

Melt the wax and hydrogenated cottonseed oil, add a small portion of the melted mixture and triturate with the zinc oxide till a smooth paste is obtained, then add the balance of the melted mixture and triturate till cool.

It may be found desirable to increase or decrease slightly the amount of wax, but this will be found out in time. Also it may be desirable to benzoinate the fat before making the ointment.

While I do not intend that such an ointment should be kept that long, I know from my experiments that it will keep perfectly for two years at least.

AS TO THE FUTURE.

Of course, at present such an ointment could not be dispensed as U. S. P. without the consent of the physicians. Most physicians will be open to such a suggestion when you tell them it is as quickly absorbed as lard, is cleaner, less liable to become rancid and is a more stable product in every way. I hope the demand will be such that it will eventually displace the present U. S. P. formula. Perhaps the demand for a hydrogenated fat suitable for pharmacy will cause manufacturers of such products to take notice of our wants and make one suitable to our needs. When they do, I predict an extensive future for such a product. We can use it to replace lard in all our ointments and thus eliminate some of our troubles.

Although I started to experiment with hydrogenated oils on an extensive scale two years ago, a change in positions has kept me so busy that I have not had time to continue the work since, consequently my experiments have been confined to only Zinc Oxide Ointment.

Acknowledgment is made to Parke, Davis & Company, in whose laboratories this work was conducted.

DETROIT COLLEGE OF PHARMACY,
April 19, 1918.

WHAT THE DRUG TRADE HAS DONE TO WIN THE WAR.*

The first paper of the symposium under above title and presented at the April meeting of the New York Branch, A. Ph. A. was by Mr. R. C. Stofer, who in his preliminary remarks referred to some of the orders that their firm had completed. He also stated that, in his opinion, pharmacy should disregard its characteristic modesty and take due credit for its achievements, many of which are the result of the marked degree of coöperation at present existing, by reason of the fluxing process which is going on between educators in pharmacy, retail pharmacists, and the excellently equipped scientific and research laboratories of progressive pharmaceutical manufacturers. Parts of his paper follow:

Digitalis: Through the intelligent direction of its collection and preparation for the market, American growers have succeeded in supplying digitalis much superior to the European article. We have received American-grown digitalis, which tested nearly two and a half times the U. S. P. standard. Experiments have been conducted in the scientific department with a view of determining the best physiological method for the estimation of the strength of digitalis preparations. Comparative tests are now being made by the one-hour frog method, the twelve-hour frog method, the cat method of Dr. Hatcher, and also the guineapig method. It is hoped from the results of these experiments a definite, scientific conclusion may be drawn as to which is the best method for testing digitalis and its preparations.

Mexican Scammony: Owing to the world war, true scammony became unobtainable in commercial quantities. Experiments, both chemical and physiological, have been made with the resin obtained from true scammony and that from the Mexican scammony. From the results of experimental work, data is now in the hands of the U. S. P. Revision Committee and they have been requested to permit the use of Mexican scammony as a source of resin scammony, as is done at the present time by the British Pharmacopoeia.

Aconite: It has been definitely shown by many investigators, that the present chemical method for the assay of aconite and its preparations is entirely unsatisfactory, as the results obtained do not indicate the therapeutic activity of the drug and its preparations. Experiments are being made, looking to the isolation of aconitine from benz-aconine and aconine, as it is claimed that these two alkaloids are not therapeutically active, to any great extent. Much research work is being performed upon the physiological method, in an endeavor to improve the new semi-official guineapig method of the Pharmacopoeia.

Belladonna Leaves: The leaves of Hungarian and German growth which we formerly received were oftentimes brown, of low assay, probably due to improper collection and preparation for the market. Much attention has been given in various sections of the United States to the cultivation, upon a commercial scale, of belladonna, and the American growers have been quick to grasp the advantage of high assay. By efficient methods, proper selection of seeds

* A symposium of the New York Branch, American Pharmaceutical Association, April meeting, 1918. Abstracts from papers by R. C. Stofer of Norwich Pharmacal Company; Saunders Norvell of McKesson & Robbins; H. C. Lovis of Seabury and Johnson, and S. B. Penick of S. B. Penick & Co.

from high assay plants, etc., there has been produced in this country belladonna assaying as high as 0.8 percent, or nearly three times the assay of the average European leaves. We now, by preference, purchase American-grown leaves as against even the good quality cultivated French leaves which reach the country in goodly quantities.

Hyoscyamus: Before the war, Russia was the principal source of supply, but the drug was notorious for its low assay and its generally poor physical condition, and it was practically impossible to obtain an article complying with the Pharmacopoeial requirements, except for occasional small lots of cultivated drug, which came over from England or Germany. America is making slow progress with the production of hyoscyamus, as successful cultivation is conceded to be difficult, however, Michigan, Maryland and Virginia produced limited quantities of this drug last year, which assayed about three times the U. S. P. standard. Therefore, we are confident that in time the American drug will be available in greater abundance.

The scarcity of belladonna and hyoscyamus led to many experiments with such combinations as pills and tablets, wherein stramonium was used in place of belladonna. As a result of clinical investigation, it was demonstrated that in many cases stramonium was entirely satisfactory to the medical profession and we have therefore been able to continue supplying such combinations as were in urgent demand with the full approval of the medical profession. By the way, stramonium grows abundantly in many sections of the country, but prior to the war, was collected only in a limited way. The cheaper labor abroad made it more profitable to import supplies from Europe, than to purchase here. Now, however, the collection in this country is enormous and we are entirely independent of outside sources. Generally speaking, American stramonium, though not cultivated, is of higher assay than the European article.

Cannabis: The U. S. P. IX recognizes American-grown cannabis, in addition to the Indian variety. This recognition has given a tremendous impetus to the growth and sale of American cannabis. Comparative tests demonstrate that the therapeutic action of the two varieties is similar, although, as a general rule, the Indian cannabis is considerably stronger than the American. This comparative difference in strength, however, can be well regulated by a proper consideration of dosage. The Pharmacopoeia requires that cannabis be standardized by determining the amount of drug sufficient to produce incoördination when administered to dogs, and by this test it is possible to select *Cannabis sativa*, which produced the desired clinical results; although as investigators, we realize that there is usually a difference in strength between the American- and the Indian-grown drug. Under present-day conditions, it is practically impossible to secure sufficient quantities of the Indian variety to meet the demand, though, thanks to American initiative, the proper collection of the native drug again enables us to proclaim our independence. The biological assay of cannabis has, in all probability been more severely criticized than any other test in the Pharmacopoeia. The basic principle of test is fundamentally correct. With some slight modification, it will eventually be made more satisfactory. An investigation of the method has been under way for about six months and as this subject is in the hands of exceptionally capable men, we may expect satisfactory results at an early date.

Styrax: Before the war, all the styrax of the U. S. P. was imported into this country. The closing of this source of supply caused us to endeavor to find a product which would be similar in action. We are now in possession of an American styrax which, experiments indicate, is in every way as satisfactory as the European article, and, in the near future, this information will be compiled and placed in the hands of the U. S. P. Revision Committee. This is another triumph for American resourcefulness.

Pituitary Extract: After several years of almost constant experimental work, we have been able to assemble an apparatus which will physiologically estimate the strength of pituitary preparations within very narrow limits. The method employed is a modification of the isolated uterus method. Preparations so standardized have been exhaustively tested in maternity hospitals, and, we are pleased to say, it is now possible to produce a pituitary extract and standardize it, with the assurance that it will meet all demands.

Pepsin and Pancreatin: Experiments are being conducted to ascertain, if possible, the rate of deterioration that takes place in pepsin and pancreatin combinations. This work must necessarily be conducted over a considerable period of time, and it will probably be four or five years before any definite results will be in evidence.

Tincture of Ginger: The result of many experiments reveals that there is considerable difficulty in meeting the standards, as laid down in the U. S. P. IX. The results of the investigation have now been turned over to the chairman of the Revision Committee, who has charge of this and kindred subjects, and it is hoped that slight changes will be promulgated, which will permit of the manufacture without the difficulties that previously attended.

Mr. Stofer concluded his remarks by referring to various methods of conservation in sugar, glycerin, fats, etc. He also stated that many tablet formulas had been revised, particularly those containing narcotics, by the elimination of the latter in many of them.

Mr. Saunders Norvell modestly carried the credit of the work represented by his firm to the wholesale drug trade in general. He spoke of the many difficulties in securing supplies, labor shortage, and the series of taxation measures with which the wholesale drug trade had to contend. Notwithstanding the many difficulties, supplies have gone forward without serious delays and the drug trade has not been charged with profiteering. The Government has bought its drug and chemical supplies for less money than the trade; contrary to the story of the cartoon, depicting the hotel manager who said to the chef, "you cut down your portions 50 percent and we will raise the prices 50 percent—the war must be won." Mr. Norvell laid stress on the fine coöperative spirit of employees with the members of firms, not only in getting out orders, but in buying bonds and contributing to Red Cross, etc. He interestingly told the story of an order for 20 million 3-grain quinine tablets, which was then in the process of manufacture. Relative to this he said in part:

This is the largest single order for quinine ever placed in the history of this country. To fill this order will require 125,000 ounces of quinine—7,812 pounds, almost four tons. Piled on top of each other the 20,000,000 tablets would be 416,666 feet high—over 78 miles. Laid alongside of each other, they would reach from New York to the outskirts of Philadelphia; from Chicago to Milwaukee, or from Washington, D. C., almost to Richmond, Va.

To obtain the 60,000,000 grains of quinine contained in the tablets, approximately 108,000 pounds, 54 tons of cinchona bark will be used, each ton of bark it is estimated yielding about an average of 7 percent of quinine.

Figuring each cinchona tree as supplying an average of 200 pounds of bark, the 60,000,000 grains of quinine will be the product of 561 cinchona trees. As each tree furnishes suitable bark for producing quinine but once in an average of one and a half years, it has required 561 years of growth to produce the 60,000,000 grains of quinine.

To collect the bark, cure it, and transport it from the tropical forests engaged the work of thousands of natives for several months.

Several other illustrations of the present-day activities were reported. In concluding Mr. Norvell said: "This war is different from all other wars the world has ever known. It is a war of trained men. It is a war of organization. The soldiers in this war can accomplish nothing without the backing of the trained workers in every field at home."

Dr. Henry C. Lovis spoke of the participation in war activities of the surgical supply houses and the preliminary arrangements preparatory to supplying the Government needs. Fortunately the manufacturers in these lines had enlarged their factories in order to meet the orders of foreign countries prior to the entry of the United States into the world conflict. In connection with these immense orders the usual demand must also be considered. The following abstract of the paper is illustrative:

The first list of goods to be supplied included bandages of all sizes; absorbent cotton; first-aid packages; shell wound dressings; bichloride gauze; adhesive plaster; ligatures of all kinds.

The gauze packages consumed 110-million yards of gauze. It was necessary to secure the assistance of spinning and weaving mills, outside of the group of straight surgical dressings manufacturers to supply this immense yardage. Since the beginning of these requisitions up to the present time there has been a total of 386,000,000 yards of gauze contracted for. That has required day and night work of 30 different weaving mills. The yards of gauze equal 219,000 miles in length and one yard width and that means, taking the distance from New York to San Francisco in round figures as about 3000 miles, one continuous stretch of gauze from New York to San Francisco, back and forth, 70 times. To manufacture that quantity of gauze, just the gauze alone, would require 77,000 bales of cotton. Each bale weighing 500 lbs., this would mean 38,500,000 pounds of crude cotton requiring quite a respectable size plantation to produce it. There were 450,000 gross gauze bandages, compressed, ordered, which were $2^1/_2''$, $3''$ and $3^1/_2''$ wide and 6-yds. long; 6,400,000 first aid packets put up in metal boxes enamelled in khaki color to match the soldiers' uniform; two of these go in a belt which each soldier carries; and in addition, two rubber-sheeting covered first-aid packets also go in his belt. Of those, there were ten million ordered. There were 34,000,000 yards Corrosive Sublimate Gauze, 1-yd. packages. One million and a half spools adhesive plaster, $1''$ x 5-yd., and one half-million $2^1/_2''$ x 5-yds., 1,400,000 shell wound dressings.

Details of other manufactures were given and Doctor Lovis closed his paper with a reference to the loyalty of those engaged in this line of manufacture.

Mr. S. B. Penick spoke of former sources of crude drugs from which supplies are no longer available. Some of these drugs are now obtained in this country, belladonna, digitalis, cannabis, hyoscyamus, stramonium, etc. The high cost of labor continues to be a problem but under present conditions supply is of first importance. Japan is furnishing valerian, chamomiles, hellebore and insect flowers while Italy, France and England are now supplying a number of botanicals heretofore procured from Central Europe. Nux vomica, rhubarb, senna, aloes and other drugs of the East have been difficult to obtain. The speaker alluded to the improved quality of drugs, due to Government supervision, and concluded with a compliment to those of the trade, who have coöperated in furnishing the Government and manufacturers with crude drugs. (See also paper by S. B. Penick, August issue, 1917, p. 695.)

CENTRAL INFORMATION BUREAU CONCERNING NATION'S HOSPITALS.

Dr. Franklin Martin, member of the advisory commission and chairman of the general medical board of the Council of National Defense, authorizes the following:

Information regarding the hospitals of the United States, in process of compilation since 1916, is now collated and indexed in the medical section of the Council of National Defense. A central bureau of information concerning the hospital facilities of the country, under war conditions, is thus provided. The data will be kept up to date from month to month. This bureau has not only the details of over 1,000 active hospitals but is also gathering full data concerning nearly 8,000 other institutions which include sanatoria, infirmaries, homes, asylums and dispensaries.

What each hospital has contributed in the way of medical men and internes for war service has been entered on the cards. The number of nurses who have volunteered and those remaining, the possibilities of expansion for war service, the results of personal inspection by State boards will constitute valuable active working data.—*Official Bulletin.*

SECTION OF HISTORICAL PHARMACY AMERICAN PHARMACEUTICAL ASSOCIATION.

MINUTES.

Chairman W. L. DuBois, of the Section on Historical Pharmacy, called the meeting to order in Claypool Hotel, Indianapolis, Ind., at 9.30 A.M. August 31, 1917. The first order of business was the reading of the chairman's address.

ADDRESS OF THE CHAIRMAN.

It has been said that Americans are not yet sufficiently imbued with the value and lessons of history and tradition. It is one of the tasks of this Section to create more and favorable sentiment among pharmacists for the preservation of whatever will give to our posterity a true historical picture of our present and past time, including its activities, aims, and achievements. I am certain that this Section will not let any opportunity pass for helpful service to the Association and to American Pharmacy.

History is interesting to look back upon, and it is pleasant to remember all those great and good men who have passed to the great beyond, who have done so much for pharmacy, especially those who were with us at our last meeting. I am afraid we do not fully realize the very great importance of doing our bit to carry on this work.

It would be an easy thing for our members from time to time to send in to the Historian matters of historical interest. As a matter of interest to coming generations, I would recommend that all members send to the Historian sketches of themselves and their impressions with their photograph.

I wrote several letters during the winter, and was very successful in finding those who kindly consented to prepare papers for this meeting, they all treat of interesting subjects, and I can promise you a program worthy of your close attention.

W. L. DuBois, *Chairman.*

Caswell A. Mayo: I move that the paper which the Chairman has just read take the usual course.

(Motion seconded and carried.)

The Chairman: The next order of business is the report of the Historian.

REPORT OF THE HISTORIAN OF THE AMERICAN PHARMACEUTICAL ASSOCIATION.

The Editor of the Journal of the American Pharmaceutical Association is also Historian, the curator of contributions to this Section. It was through the hearty coöperation of the Treasurer that many of the photographs reported hereafter were received. It has been provided that every member of the Association be requested to send his or her photograph to the Historian, accompanied by a brief sketch of the life of the contributor. This provision has a growing value and it is hoped that all members who have not complied with the request do so as soon as possible. The data especially desirable are the events of every life, and also such other information of the correspondent's professional and business activity that should be made a matter of record.

Frederick T. Gordon who was associated with this Section in various capacities passed away this year. He had in his care a number of contributions that had been made to the Section, and Mrs. Gordon has turned these over to the Historian, among these is an interesting album presented several years ago by our fellow-member, Hugo Kantrowitz, editor of the Deutsch-Amerikanische Apotheker Zeitung, New York. There are a number of contributions, that have in years past been made, which your Historian has not been able to locate.

Last year the writer made the suggestion that an historical exhibit be provided at each annual meeting by the hosts; this has been adopted by Indianapolis members and will doubtless prove of interest not only to the visitors but also to the pharmacists of Indianapolis. Research

work and the collection of historical matter always brings up the thought of a home. The time may not be opportune just now, but we should bear the important matter in mind. We have ample accommodation for the present for historical matter that may come in.

This is the centenary year of the beginning of the United States Pharmacopoeia and in the Journal of the American Pharmaceutical Association for August a record of the event is made.

Since we met in Atlantic City, as far as we have received information, the following have been claimed by death:

David Strauss, Newark, N. J.
Theodore G. E. Otto, Columbus, Ind.
Conrad Schadt, Amana, Ia.
George C. Bartells, Camp Point, Ill.
Linus D. Drury, Roxbury, Mass.
Edwin P. Burleigh, Boston, Mass.
Robert H. Land, Augusta, Ga.
M. I. Wilbert, Washington, D. C.
G. M. Sutherland, Alameda, Cal.
A. J. Lachapelle, Turners Falls, Mass.
E. S. McKee, Cincinnati, Ohio.
J. F. Llewellyn, Mexico, Mo.
William C. Alpers, Cleveland, Ohio.
Cyrus J. Lammert, Cincinnati, Ohio.
Joseph Feil, Cleveland, Ohio.
N. Gray Bartlett, Chicago, Ill.
A. D. Thompson, Minneapolis, Minn.
Robert W. White, Philadelphia, Pa.
B. S. Cooban, Chicago, Ill.
C. Lewis Diehl, Louisville, Ky.
F. E. Farmer, Rutland, Vt.
Bower T. Whitehead, Brookings, S. D.
John C. Hurd, Somersworth, N. H.
George A. Ferguson, New York City.
Thomas F. Main, New York City.
Albert F. Stiefel, Pittsburgh, Pa.
Joseph Weinstein, New York City.
Frederick T. Gordon, Philadelphia, Pa.
J. F. Pearson, Annapolis, Md.
Alois von Isakovics, Monticello, N. Y.
George V. Moschel, Spring Valley, Ill.
J. O. Schlotterbeck, Ann Arbor, Mich.
Frederico Grimany, Santiago de Cuba, Cuba.
D. Kirkland, Los Angeles, Cal.

Thirty-four in number, about twelve per thousand of our membership; four of the deceased were members of the U. S. P. Revision Committee; two had been presidents of the American Pharmaceutical Association and one, an Honorary President, two had been Chairmen of this Section. Death has also entered the homes of a number of our members.

The present is our field of duty but we should hold those who added benefits to our Association and joy to our lives in affectionate remembrance.

Respectfully submitted,

E. G. EBERLE, *Historian.*

CONTRIBUTIONS RECEIVED.

PHOTOGRAPHS AND SKETCHES.

Charles A. Apmeyer, Cincinnati, Ohio.
R. A. Austin, Cairo, N. Y.
J. G. Beard, Chapel Hill, N. C.
I. J. Blumenkranz, New York City.
Charles Bidwell, Albion, Ind.
Sarah Bustillo, Havana, Cuba.
K. E. Bennett, Bryson City, N. C.
C. F. Chandler, New York City.
Angelica M. Curbelo, Havana, Cuba.
Thomas P. Cook, Deceased.
R. W. Conzet, Greenup, Ill.
Dra. Paula Coll, Havana, Cuba.
J. H. Dawson, Glendora, Cal.
F. A. Dinkler, Hennessey, Okla.
Wm. B. Day, Chicago, Ill.
A. R. L. Dohme, Baltimore, Md.
E. G. Eberle, Philadelphia, Pa.
C. L. Eddy, New York City.
John T. Elam, Henderson, Ky.
O. A. Farwell, Detroit, Mich.
Joseph Feil, Deceased.
W. W. Friedenburg, Winfield, Kans.
J. P. Gilmour, London, W. C., England.
F. C. Godbold, New Orleans, La.
B. B. Goolkasian, Boston, Mass.
W. L. Harbaugh, Haverford, Pa.
Mrs. Alice B. Halstead, Muscatine, Ia.
Charles Holzhauer, Newark, N. J.
B. E. Hockert, Hartford, Conn.
T. N. Jamieson, Pasadena, Cal.
George Kleinau, New York City.
J. F. Llewellyn, Deceased.
R. A. Lyman, Lincoln, Neb.
J. L. Lemberger, Lebanon, Pa.
R. H. Land, Deceased.
J. W. Morrisson, Chicago, Ill.
Wm. Mittelbach, Booneville, Mo.
H. Lionel Meredith, Hagerstown, Md.
Alex B. J. Moore, Montreal, Canada.
Thomas F. Main, Deceased.
W. J. J. Paris, Rosiclare, Ill.
J. C. Prote, Jr., Astoria, N. Y.

Albert Plaut, New York City.
Clarence G. Stone, New York City.
H. W. Schimpf, New York City.
A. G. Schlotterbeck, Portland, Me.
J. O. Schlotterbeck, Deceased.
F. E. Stewart, Philadelphia, Pa.
Paul G. Schuh, Cairo, Ill.
Michael Saccar, Hallettsville, Texas.
W. G. Sprague, Flushing, Mich.
John W. Stokes, Indianapolis, Ind.
Eli S. Troupin, Stamford, Conn.
Orazio Tocco, Brooklyn, N. Y.
P. Henry Utech, Meadville, Pa.
T. S. Van Aller, Mobile, Ala.
D. von Riesen, Marysville, Kans.
J. A. Wolfe, Philadelphia, Pa.
Francis B. Winski, Stamford, Conn.
M. I. Wilbert, Deceased.
Rudolph Wirth, New York City.
Carl Whorton, Gadsden, Ala.

PHOTOGRAPHS.

Carl L. Alsberg, Washington, D. C.
Mrs. F. M. Apple, Philadelphia, Pa.
F. M. Bass, Decherd, Tenn.
Charles H. Bassett, Boston, Mass.
George M. Beringer, Camden, N. J.
Mrs. George M. Beringer, Camden, N. J.
J. C. Brenner, Gonzales, Texas.
J. C. Burton, Stroud, Okla.
Otto F. Claus, St. Louis, Mo.
W. L. Cliffe, Philadelphia, Pa.
Adolph Dreiss, San Antonio, Texas.
Hermann Dreiss, San Antonio, Texas.
C. A. Duncan, Dallas, Texas.
J. W. England, Philadelphia, Pa.
Bernard Fantus, Chicago, Ill.
Mrs. Eben G. Fine, Boulder, Colo.
J. F. Finneran, Boston, Mass.
C. M. Ford, Cambridge, Mass.
E. H. Gane, New York City.
E. N. Gathercoal, Chicago, Ill.
J. G. Godding, Boston, Mass.
James M. Good, St. Louis, Mo.
Samuel C. Henry, Philadelphia, Pa.
S. L. Hilton, Washington, D. C.
H. P. Hynson, Baltimore, Md.
C. W. Johnson, Seattle, Wash.
Mrs. Jean M. Kenaston, Bonesteel, S. D.
William J. Koch, New York City.
Charles H. Mayo, Rochester, Minn.
Niels Mikkelsen, Kenesaw, Neb.
Harry J. Novack, Philadelphia, Pa.
Oscar Oldberg, Chicago, Ill.
Bertha Ott, Cincinnati, Ohio.
Frederick B. Power, Washington, D. C.
W. O. Richtman, Madison, Wis.
Mrs. E. A. Ruddiman, Nashville, Tenn.
J. D. Stocking, Clarendon, Texas.
W. J. Sturgeon, Kittanning, Pa.
George D. Timmons, Valparaiso, Ind.
Joseph Vadheim, Tyler, Minn.
C. E. Vanderkleed, Collingswood, N. J.
Walter J. Vitous, Morton, Wash.
John C. Wallace, New Castle, Pa.
James Weyrauch, Chicago, Ill.
H. M. Whelpley, St. Louis, Mo.

SKETCHES.

C. O. Bigelow, New York City.
Woods A. Caperton, Indianapolis, Ind.
Francis B. Hays, Oxford, N. C.
E. S. Hebberd, LaCrosse, Wis.
J. U. Lloyd, Cincinnati, Ohio.
Ewen McIntyre, Deceased.
Edw. W. Morse, Deceased.

BADGES.

Illinois Pharmaceutical Association and Illinois Pharmaceutical Travelers Association, Springfield Meeting, 1915. Contributed by Wm. B. Day.

Texas Pharmaceutical Association, San Antonio Meeting, 1917. Contributed by E. G. Eberle.

Washington Pharmaceutical Association, Spokane Meeting, 1917. Contributed by W. E. Bailey.

PROGRAMS.

Joint Meeting of the American Pharmaceutical Association and the California Pharmaceutical Association, San Francisco, 1915.

National Association Boards of Pharmacy, Philadelphia, 1916.

Twenty-fifth Anniversary Testimonial Dinner to Dr. Wm. C. Anderson, November 21, 1916.

Testimonial Dinner to Prof. Wm. B. Day by Alumni, June 6, 1917.

Testimonial Banquet to J. U. Lloyd by Cincinnati Branch, October 1916.

Illinois Pharmaceutical Association and Illinois Pharmaceutical Travelers Association, Springfield, 1915. Contributed by Wm. B. Day.

Illinois Pharmaceutical Association and Illinois Pharmaceutical Travelers Association, Fox Lake, 1914. Contributed by Wm. B. Day.

Illinois Pharmaceutical Association and Illinois Pharmaceutical Travelers Association, Springfield, 1912. Contributed by Wm. B. Day.

Illinois Pharmaceutical Association and Illinois Pharmaceutical Travelers Association, Rock Island, 1911. Contributed by Wm. B. Day.

Illinois Pharmaceutical Association and Illinois Pharmaceutical Travelers Association, Springfield, 1916. Contributed by Wm. B. Day.

American Pharmaceutical Association, Atlantic City, 1916.

Washington State Pharmaceutical Association, Spokane, 1917. Contributed by A. W. Linton.

Programs, etc., of Texas Pharmaceutical Association meeting, San Antonio, 1917.

Testimonial to Dr. F. J. Wulling.

MISCELLANEOUS.

Photo—Officers and Directors of the American Druggists Fire Insurance Co., Tenth Anniversary.

Report of the Tenth Anniversary Convention of the American Druggists Fire Insurance Co.

12 Snapshots, Atlantic City Meeting, 1916. Contributed by Druggists Circular (C. L. Eddy).

2 Snapshots, Atlantic City Meeting, 1916. Contributed by Mr. and Mrs. Peacock.

5 Snapshots, Atlantic City Meeting, 1916. Contributed by Hugo Kantrowitz. Tribute to Dr. Wm. C. Alpers, printed in the Journal.

Brochure, Chicago Veteran Druggists Association, Twentieth Anniversary, 1917.

Photo—Chicago College of Pharmacy.

Resolutions on the death of C. Lewis Diehl, by Louisville College of Pharmacy.

3 Photos—interior of store of Mrs. Alice B. Halstead, nee Braunwarth, Muscatine, Iowa, taken in 1892.

Photo—Thomas D. McElhenie's Pharmacy, Brooklyn, N. Y.

N. A. R. D. Groups, photos sent in by Caswell A. Mayo.

Mulford Digest—25th Anniversary of Mulford Laboratories, 1917.

Snapshots, San Francisco meeting, by Miss Gertrude Scherling.

Snapshot, Half dozen pharmacists in attendance at New York City Meeting, including deceased members, W. M. Searby, W. C. Alpers, S. A. D. Sheppard.

Snapshot, Members A. Ph. A. after the Montreal Meeting on a trip up the Saginey River.

Snapshot, Ladies in attendance at the Hot Springs Meeting.

Ladies' Souvenir, A. Ph. A., Indianapolis, 1906. Contributed by H. M. Whelpley.

Coupon Tickets, Washington Pharmaceutical Association, Spokane, 1917. Contributed by W. E. Bailey.

Letters, Wholesale Druggists in California in 1857, including a letter from Prof. William M. Searby.

Personal correspondence of E. G. Eberle with Martin I. Wilbert, during 1916.

Photo—First Meeting of the Texas Pharmaceutical Association, Dallas, May 1, 1879. Contributed by E. G. Eberle.

U. S. Pharmacopoeia, 1830. Contributed by Dr. F. B. Kilmer.

Photo—Texas Pharmaceutical Association, Waco, May 1892.

U. S. Dispensatory, 6th Edition, 1845. Contributed by F. B. Kilmer.

History of England, 1825. Contributed by F. B. Kilmer.

Moore's "Monitor," 1803. Contributed by F. B. Kilmer.

Some Clippings and letters sent in by Dr. Whelpley include: Death of T. Morris Perot, Frederick Stearns, Wm. Weightman and H. J. Schlaepfer; sketches of Wm. Mair, F. C. S., John Larrabee, Dr. Cook, written by Motter, and H. E. Glick; letter of S. A. D. Sheppard, June 4, 1903; Personnel of Commissioners of Pharmacy, Washington, D. C., 1903, Frank C. Henry,

Henry A. Johnston, Francis P. Morgan, Murray G. Motter, Fred T. Hafelfinger; Lists of lady pharmacists in Arkansas, Illinois and Indian Territory.

THE CHAIRMAN: Gentlemen, you have heard the Historian's report. What is your pleasure?

H. M. WHELPLEY: I move that it be received and take the usual course.

(Motion seconded and carried.)

THE CHAIRMAN: The next report is that of the Indianapolis Historical Exhibit.

REPORT ON THE INDIANAPOLIS HISTORICAL EXHIBIT.

(Verbal Report by Chairman E. G. Eberhardt.)

Mr. Chairman: I have no formal report to make. As a matter of fact, I did not know that a report was expected until I saw the program. While we met with some success in getting together a few relics, we did not realize how difficult it was going to be to collect exhibits that would, at least in some degree, represent historical Indiana pharmacy.

In the first place, we are making contemporaneous history at such a rate that it is very difficult to get people interested in things of the past, and while we had some responses to our inquiries, it was very difficult to get prospective contributors to realize what we wanted. I have had men say to me, "If I only knew what you wanted, I could have helped you out. I have such and such things at home." We tried to make it plain to them by correspondence, but they did not seem to get the idea.

Then we met another condition: People, as a rule, do not realize the value of historical matter, and the junkman gets a great deal of what ought to be preserved for its historical value. We found that much of the material which would be of great interest in an exhibit of this kind, has gone, and gone forever. The junk and gentleman vandals are the worst enemies that we have. I think this is the very thing that this Association has an opportunity to accomplish a great work in, and that is to make our members understand that an historical exhibit is of much live, educational value, to impress the members that some of the old things they throw away are worth preserving.

The exhibit will have to speak for itself. We have material from outside of this city, but most of it is from local druggists. It goes back forty or fifty years, some of it sixty or seventy-five, and a few of the items were brought over from Germany by some old-time members.

I am sorry we did not succeed in securing all the material we hoped to get. For instance, we expected some material from Browning, Sloan & Co. It was inaccessible, as the family's belongings are stored. However, we have obtained a few things, among them Parrish's Pharmacy, the Fourth Edition. I had hoped to get a picture of Mr. George Sloan, but was unsuccessful.

If your Historian sees any article that he would like to have for the permanent collection, of this exhibit, we shall be very glad to put him in touch with the owners of the same, and I think probably such material would be donated or loaned. I believe such a local exhibit as this can be used as the means of selecting material for a National Pharmaceutical Exhibit.

I want to thank all of those, on behalf of the Committee, who have contributed to the exhibit.

THE CHAIRMAN: You have heard the report of Mr. Eberhardt.

CASWELL A. MAYO: I move that the report be accepted, and that the thanks of the members be extended to the Committee for the trouble they have taken in making the collection.

(Motion seconded and carried.)

EDITOR EBERLE: We would like to have whatever the exhibitors are willing to donate. It is contemplated to provide a room or space in the Smithsonian Institute in Washington, where historical matter will be properly taken care of.

EDWARD KREMERS: Those of you who will recall the organizing of this Section back in 1902, will understand what pleasure I took in working out this

matter, and in connection with the work being done in this Section. It is indeed exceedingly gratifying to see this exhibit, modest as it is, in comparison with the exhibit in 1902, or even last year, yet its significance is such that we should not pass it without a word.

Mr. Eberhardt has said that no doubt some articles exhibited might be turned over to the American Pharmaceutical Association for a permanent collection. I trust this may be done. On the other hand, it might be well for the American Pharmaceutical Association not to overload its exhibit. It may be better to keep part of that exhibit right in Indiana. While I appreciate the museum at Washington, I also appreciate the missionary work which the local exhibits can perform, without detracting from the National Exhibit, which should be our first aim.

EDITOR EBERLE: If the Section so concurs, I would like to have the Historian instructed to ask the members at Chicago to provide an historical exhibit for the 1918 meeting. I do not know whether a motion is necessary or not.

H. M. WHELPLEY: I had two or three things in mind, part of which Mr. Eberle presented, and another person presented another part of them. I have particularly in mind that the Chairman of this Committee should submit to this Section a list of the articles exhibited, and the names of those who have contributed these articles for the Exhibit.

I particularly endorse the recommendation, and I think it should go forward from this Section, that the Committee for the Chicago meeting should continue this plan of having a local exhibit.

In regard to the disposition of this Exhibit, Dr. Kremers has made the point very clear, and the only word I want to add to it is this, that we should be careful that any exhibit in the collection that is deposited in the Smithsonian Institution, temporarily, should not include any of those things that are of local interest.

As an example of what I mean, you have much here that pertains to Indianapolis, or pertains particularly to Indiana, without being of any particular significance beyond the borders of this State. A mortar or a picture, or something of that kind from the store of Ex-President Sloan of the American Pharmaceutical Association, and one of the prominent men in American pharmacy, would be very appropriate for this National Museum. It might also be well to deposit with the American Pharmaceutical Exhibit some things that are duplicates, even though they are not of a National character. They might be held so that later on they could be placed where they would be of permanent interest.

I am certainly pleased to see how the historic interest has developed and grown in pharmacy. I know what some men like Doctor Kremers have done, and remember when he spoke very discouragingly about the matter some years ago, and now it must be gratifying to him to see that his own work is bringing results.

F. E. STEWART: I received a letter from the Massachusetts Agricultural College, Extension Service, signed by Mr. Wayne Arny, that I would like to present as a matter of historic interest.

(Mr. Stewart read the letter from Mr. Arny.)

CASWELL A. MAYO: I move that the letter be referred to the Council for consideration in connection with the plans of the Exhibit. (See December 1917 JOURNAL A. PH. A., p. 1098.)

A paper, "The Development of Manufacturing Pharmacy" was presented by Mr. J. K. Lilly and brought out considerable discussion and comment. Professor Lloyd indicated in his remarks that Mr. Lilly might be willing to donate a picture of the original Lilly Laboratory to the Section. He had in his possession some apparatus used by Dr. John King and two suppository molds used by Dr. W. D. Chapman and, if a permanent exhibit was provided he would present these to the collection. (The paper by Mr. Lilly is printed in this issue of the JOURNAL.)

J. N. HURTY: We solicited Mr. Charles Dennis, an old-time druggist for a contribution. He said he was never a pharmacist, but at one time he thought he was a part of an apothecary. He has become a very eminent writer. He has written no book, but he has become very prominent as a writer in newspapers of this section. He has been contributing articles that are full of wit and wisdom. He was requested to give us some reminiscences in regard to early pharmacy in this State, and he addresses this letter to Mr. Eberhardt.

INDIANAPOLIS, IND., August 7, 1917.

MR. E. G. EBERHARDT:

Some weeks ago my long-time friend, Dr. John N. Hurty—alas, that even those in whom one most confides should be the first to take advantage of one's feeble resistance and impale one on the sharp hook of a promise—asked me to write something concerning the early years of pharmacy in Indianapolis.

Fifty-five years ago when first I entered the drug trade as a soda-water boy and general roustabout, there were more farmers than pharmacists in Indiana. The only pharmacist in this city in the sixties was Dr. George W. Sloan, who was not at all puffed up by this distinction, but then and always after was the most genial and kindly gentleman of all my acquaintances, a true friend and a man of wide information which he could communicate most happily without his auditor being distressed by lack of knowledge.

Along in the sixties there was not, as my remembrance goes, a single sign proclaiming a pharmacy in this modest little city. I believe there were only thirteen—fateful number—drug stores and of these only two dared venture on the title "apothecary." These were conducted by Germans and in Teutonic script on the show window they blazoned to the world the word "Apotheker."

In the sixties and far into the seventies the pharmacist, as I said, was next to unknown. We were not then the physician's "cook" but merely druggists and dealers in "paints, oils, varnishes, dye-stuffs, window glass, perfumery, fancy goods, patent medicines, chemicals, glassware, putty, brushes, spices, cigars, tobacco"—and although we did not mention it above a whisper—all kinds of vinous and spirituous liquors. In that day the druggist did not sell candy—except as an evasion for vermifuge calculated to deceive innocent childhood—no postage stamps, nor did he take in washings—all this came later.

In that day the child of pious parents might be trusted with some pieces of copper coin for the missionary box on a Sunday morning as there was no candy counter in the drug store—now the pharmacy—to divert the contribution from the pagan to the 'pothecary. The old-fashioned drug store had but two articles in its inventory to beguile the sweet toothed youth of that time; one of these was *radix glycyrrhiza*, liquorice root and the other was jujube paste.

The druggists and his skillful assistants in the course of a single day played many parts. The same hands and the same smile that had just weighed out fifteen pounds of yellow ocher, ten pounds of Venetian red and measured five gallons of linseed oil, boiled or raw, would wait upon the fashionable lady whose favorite odor was Patchouli, which she bought at $3 an ounce, Lubin's extract, for this was in the days of the civil war when our currency was worth but little more than 33 cents of a dollar on a gold basis.

There was not then nor for long afterward a school of pharmacy in Indiana, but the proprietor, or perhaps the head clerk, was not to permit the cub to remain in ignorance of the history of the roots and herbs that he handled. This was before the manufacturing pharmacist had taken away all the rudiments of the business and furnished everything ready-made and sugar coated. The cub was then required to take out the iron mortar and with blows that could do credit "to days of old when knights were bold," smash black cohosh, blood root or any other character nominated in the materia medica to diminutive smithereens. The blood root was one especially fine to the nostril of the young acolyte.

On a winter's evening the cub, when trade would flag, would be set to read *Parrish's Pharmacy* or in what he came to believe the compendium of all knowledge—the *United States Dispensatory*. If the cub should be a laggard in going to his duty, there was something else in store for him. He could spend that winter evening in putting up essence of peppermint and cinnamon, in making and boxing seidlitz powders or getting up a supply of castor oil, Bateman's drops and Godfrey's cordial—which by many years had anticipated the "soothing syrup for children." The drug cub of that day, as it recurs to my remembrance had fewer evenings off than now. The idea appeared to pervade the elderly drug mind that holidays should be few and the working hours should be long. There were no motion picture shows, no short skirted vaudeville and there was a narrow chance that the cub should be able to attend the annual circus.

Yet, I cannot but believe even with these handicaps, the cub of the war-years of 1861–65 was favored with a knowledge of current affairs above the boy of today's pharmacy. The gossip of the little city as there were no clubs or club rooms in that day met at the drug store and around the wood-fires that crackled in the stove. There were many discussions of various themes—the war politics, and religion to which with eager ears the boy listened—and fireside tales told by doctors, lawyers, and other "leading citizens," who had leisure to be better talkers than we have today and spared no detail to render a narrative interesting.

Perhaps—though I do not insist upon this—the drug cub of that day had an originality in mischievous invention of which the pharmacist boy is untainted or immune—I remember a team of two cubs in a Washington street drug store who were the authors of a sensation that was for some days a cause of much alarm. It was given half a column in the newspapers of that day and there were many nervous persons who for several days evaded the south side of Washington street between Pennsylvania and Meridian streets, particularly that part fronting the New York Store.

These young artists had possessed themselves of a couple of long glass tubes and from a second story window at intervals during the day they would fire pellets of putty at unsuspicious passers-by. Their aim was so accurate and their windpower so strong that it was no trouble at all for them to hit a good-sized neck above the collar at a distance of two hundred feet or more. They were never detected and these attacks were laid to some anonymous marksman who was armed with an air gun, all the more dangerous in that it made no noise when discharged. It was lucky for the cubs that this was so. Their discharge had they been detected would have made considerable noise and perhaps have met with the attention of the criminal court.

A drug cub of my acquaintance who was, indeed, for a time in my employ, but was permitted without serious remonstrance on my part to sever his connection, was a past master of mischief. One day a young fellow from the country entered the store and with a furtive glance at the surroundings selected the cub with the feeling that that young personage would not be suspicious as to his purpose asked the cub for a Spanish fly. The cub disappeared for a moment and returned from the backyard with a buzzing blue-bottle fly in a one-ounce vial—"ten cents" said the cub.

"Why," said the country yokel, "I did not know they were alive."

"Yep," said the cub, "we only have 'em alive, that's the only kind that'll do the business."

On another occasion a woman in the neighborhood, a good customer, brought her two small boys into the store and turning the lads around so they faced backwards, said, "see what your boy has done?"

The cub had poured a thin trail of sulphuric acid on some boxes whereon the boys of the neighborhood were wont to congregate and the woman said this had eaten out the seat of the youngsters' trousers, for which prank the proprietor was called upon to pay damages.

I have quite serious doubts as to any benefit that may come from this recital of ancient reminiscence, but I have been so long out of touch with the trade—which is now a profession—that any effort in which the people of today might be interested can scarce be anything but a failure.

(Signed) CHARLES DENNIS.

J. N. HURTY: There is a little town in Indiana called Gassport, where resides an old character, Dr. Wooden. He is eighty-six years old. He has been in the drug business over sixty years, and he has written us a letter which I will read to you.

GASSPORT, IND., August 14, 1917.

E. G. EBERHARDT:

In reply to circular letter of this date, I commenced practicing medicine at this place in the spring of 1851, 66 years ago. I graduated from the Indiana Central Medical College, Indianapolis, Ind. When I commenced practice here we had no railroads, telegraph, telephones, pike roads, microbes and appendicitis, but we had plenty of horse-flies and mosquitoes along White River. I was my own pharmacist, manufactured all of my tinctures by the old process of 14 days' maceration and then filtering. I also manufactured all the cathartic and ague pills. I got to be an expert in making pills; could roll two at a time with my hands.

That was pharmacy—early pharmacy in this part of Indiana. What a change now! However the physicians of back in the 40's and 50's were just as much up-to-date as the physicians are to-day, considering their environment. It is true that the thumb lance and large doses of calomel have been relegated to the rear, and 50 years from now the hypodermic syringe and sugar-coated tablet will follow along with the lancet and calomel. What then will be the practice? I apprehend almost all nervous diseases will be treated mentally, without the use of nauseating remedies. The science of medicine will still progress. Pharmacy will still progress. But don't arrogate to yourselves that you know about all that is connected with pharmacy now.

Yours respectfully,

(Signed) JERRY WOODEN.

Dr. J. N. Hurty then read a paper in which he entertainingly and interestingly reported some of his Drug Store Recollections. (We hope to print this paper in a later issue of the JOURNAL.)

The next number of the program was a paper by Caswell A. Mayo on "Antique Mortars," illustrated by lantern slides. The illustrated article was published in the *American Druggist* and also in the *Alumni Journal* of the New York College of Pharmacy, July 1917. The exhibiton of these mortars was held at the College and included the Fraser, Pfungst and Morgan collections, among the latter a mortar belonging to Sig. Enrico Caruso. The lecture was arranged according to periods and also the sources of these mortars. The value of the mortars exhibited was estimated at about twenty-five thousand dollars.

The next paper was by Frank H. Carter and entitled "Historical Pharmacy of Indianapolis." Then followed one by Dr. Edward Kremers, "Lafitau's Memoir on Ginseng." (See May issue 1918, JOURNAL A. PH. A., p. 448.)

Edward A. Sayre presented a continuation of the history of the New Jersey Pharmaceutical Association, bringing his contributions to the close of 1916.

Hugo Kantrowitz next read a letter from Wilhelm Bodemann of Chicago relating to the Chicago Veteran Druggists' Association. (Printed May 1918, JOURNAL A. PH. A., p. 448.)

W. F. Gidley presented a history of Purdue University School of Pharmacy.

Francis Hemm summarized an interesting collection of historical material relating to Carl Ludewig Lips, an apothecary of St. Louis from the 50's to the

'70's. An English translation of the items was turned over to the Section. In brief, the papers are summarized as follows; the originals are in possession of the Alumni Association of the St. Louis College of Pharmacy:

1. The birth and baptismal record of Carl Ludewig Lips, an apothecary of St. Louis during the fifties and sixties and seventies.
2. His school certificate.
3. Proof of requisite preliminary education.
4. Certificate of apprenticeship.
5. Diploma.
6. The apothecary's oath taken by Lips.
7. Proof that Lips has taken the oath in this body.
8. Reports of two of Lips' pharmacy inspections.
9. Certificate of Lips' honorable discharge from military service.
10. Testimonials received by Lips from his several employers.

Dr. H. M. Whelpley presented reprints from Meyer Brothers' Druggist of reminiscences of Professor C. Lewis Diehl by his daughter. The personality of this lovable character is clearly shown. The article is printed in the publication mentioned for August 1917, pp. 250–251.

Following the reading of each paper the contributors were given a vote of thanks. The next order of business was the election and installation of officers for the ensuing year as follows: *Chairman*, L. E. Sayre of Kansas, and *Secretary*, Hugo Kantrowitz of New York. After extending a vote of thanks to the retiring officers the Section adjourned.

THE DEVELOPMENT OF MANUFACTURING PHARMACY IN INDIANA.*

BY J. K. LILLY.

Until the period following the close of the Civil War there were no manufacturing pharmaceutical establishments in the State of Indiana, such operations being limited to small laboratories in wholesale or retail drug houses. The house of Craighead & Browning, afterwards Browning & Sloan, located in Indianapolis, had a large wholesale and retail business and made a great many of their own preparations, but did not sell them to others. It is an interesting piece of history that as late as 1885 or 1886 the retail department of Browning & Sloan did a larger volume of business than any other concern in the United States. A force of twenty-five or thirty clerks were employed. A prescription counter about fifty feet in length literally swarmed with prescription clerks, and a very large portion of the dispensing of drugs for Central Indiana was handled by the store. A large building on Washington Street was occupied by a large stock of merchandise and nothing but drugs and immediately allied lines were handled. The synonym for the firm name of "Apothecaries Hall" was employed and appeared on all signs and printed matter. George W. Sloan, of this firm, was a lifelong member of this Association and at one time its president.

The first laboratory for the manufacture of pharmaceutical preparations in Indiana was established by Mr. James E. Lilly at Evansville, Ind., in the year

* Read before the Section of Historical Pharmacy, A. Ph. A., Indianapolis meeting, 1917.

1870. The title of this firm was James E. Lilly & Company, the company being his father-in-law, Captain Dexter, a noted steamboat captain and owner of several boats running on the Ohio river. In 1872 Capt. Dexter's interests were purchased by a Mr. Phelan, the firm becoming Lilly & Phelan. Considerable progress was made by this concern during the few years of its existence and a catalogue on display in the historical exhibit of this meeting shows that considerable quantities of goods must have been shipped outside the confines of the State. In those days river traffic was very heavy and Evansville was favorably located for all Ohio and Mississippi River points, also their tributaries. Owing to financial speculations by the junior member of the firm of Lilly & Phelan, financial embarrassment overtook the concern and it went out of business in 1874. Mr. James E. Lilly then entered the employ of Wm. R. Warner & Company, of Philadelphia, but in 1878 became associated with his brother Eli at Indianapolis and has been continually associated with Eli Lilly & Company as partner and officer since that date.

About the year 1875 the firm of Buntin & Armstrong, of Terre Haute, began the manufacture of a line of pharmaceutical preparations consisting principally of elixirs and syrups, and secured a substantial volume of trade throughout Indiana and Illinois. Subsequently this line was abandoned by this concern upon its dissolution, W. H. Armstrong establishing a surgical instrument house and Mr. Buntin establishing the Buntin Drug Company, of Terre Haute, which is still in existence as a retail drug store.

In 1873 Eli Lilly, associated with Dr. John F. Johnston, established the firm of Johnston & Lilly at Indianapolis.

In response to a request by the committee of your Association, a brief synopsis of the life of Eli Lilly is given as follows:

He was born in Baltimore, Md., in 1838, the Lilly family having been established in and around Baltimore from a period antedating the Revolution. During infancy he removed with his parents to the Blue Grass region of Kentucky, first residing at Lexington and later upon a farm near the town of Warsaw, in Gallatin County. When still quite a small lad the family removed to Greencastle, Ind. This town remained the family home for many years. Along in the fifties young Eli paid a visit to his Uncle Caleb, at Lafayette, Ind. In those days Lafayette was looked upon as the coming metropolis of the West, being at the head of navigation of the Wabash and also on the thriving Wabash & Erie Canal. In wandering about the public square, taking in the sights of the city as country-town boys are wont to do, his attention was attracted to a large sign depicting the story of The Good Samaritan. This sign occupied a goodly portion of the front of a building over the door of the drug store of Henry Lawrence. Mr. Lawrence was a highly educated English apothecary and enjoyed the confidence and patronage of a large following of physicians and the laity. He called his store "The Good Samaritan Drug Store." This caught the youthful fancy of Eli, and upon returning to the office of his uncle he solicited his assistance in securing a job in that Good Samaritan Drug Store. This was very fortunately accomplished and Eli immediately entered the employ of Mr. Lawrence as an apprentice on the old English plan of pharmaceutical apprenticeship. It was a thorough school and Eli succeeded in winning the approval of his preceptor.

Many are the interesting stories told of pharmaceutical manipulations of those early days in The Good Samaritan Drug Store—the manufacture of pills by hand in large quantities, the powdering of gamboge and other noxious substances in iron mortars, with one's respiratory organs protected by wet cloths, the daily study hour, the hour of recitation before retiring, the early hours of opening, building the fire on cold mornings, will all be familiar to those informed on early pharmaceutical training. In due course Mr. Lawrence announced that Eli was competent to conduct his own store. He thereupon returned to Greencastle and after a brief clerkship his father assisted him in establishing a store in which he was just beginning to make some progress when the Civil War began in 1861. Having always possessed a love for military affairs, he immediately volunteered for service, literally locking his front door and leaving for the front. He served his country continuously throughout the war, first as Lieutenant in an Infantry Company on the three months' service, then Captain of Artillery for several years, in which he took part in Chickamauga, Hoover's Gap, Mossy Creek and other important battles. Later he entered the Cavalry service and was mustered out as Colonel of the 9th Indiana Cavalry.

At the close of the war he undertook cotton planting in Mississippi. This venture, however, proved disastrous, droughts and malaria ruining him in health and purse. Coming north in '67, he secured a place with the wholesale drug house of H. Dailey & Company, in Indianapolis, having charge of the little laboratory and the filling of certain kinds of orders. In 1869 he formed a co-partnership with Mr. James Binford, of Crawfordsville, Indiana, and opened a retail store in Paris, Edgar County, Ill., under the firm name of Binford & Lilly. This store still exists under the name of the Binford Drug Company. This proved a successful venture and gave him a small amount of capital with which he joined with Dr. John F. Johnston, as previously stated, and formed the manufacturing pharmaceutical concern of Johnston & Lilly, in Indianapolis, in 1873. In 1876 Mr. Lilly withdrew from the firm of Johnston & Lilly and established his own business under his own name, as sole proprietor. The Johnston & Lilly establishment continued for some years under the name of John F. Johnston, but was eventually discontinued. The business of Eli Lilly prospered from the beginning and in 1878 larger quarters were secured. In 1880 it was incorporated as a stock company, the stock other than Mr. Lilly being held by his brother, James E. Lilly, and other members of the family. The growth of this and other concerns now in Indiana has been along parallel lines with the establishment and development of concerns in other States and is not particularly worthy of notice other than they may deserve no mean place in the great development of manufacturing pharmacy in the United States since the Civil War.

One accomplishment in which the Lilly concern took some satisfaction in the earlier years was the invention of the first process by which pills could be coated with gelatin without the necessity of impaling each pill on the end of a needle. This process is being shown in your historical exhibit and will not be elaborated upon here. Since then other and better methods have been devised by others and are in general use.

Another accomplishment was a line of assayed fluid extracts, being the first to be introduced under that name and a part of the small beginnings of the now

generally adopted plan of standardization. The lines covered by Indiana concerns are in concert with others of like nature, constantly broadening until including almost everything in a pharmaceutical and biological way.

The next concern to appear in Indiana along manufacturing lines was the McCoy-Howe Company, of Indianapolis, established in 1892. This concern has grown to large proportions and supplies a generous line of products to the physicians of Indiana and adjoining States. From time to time other houses have been established until to-day we have in Indiana the following active concerns:

Central Pharmacal Co., Seymour, Ind.

Lafayette Pharmacal Co., Lafayette, Ind.

Frank S. Betz Co., Hammond, Ind.

C. M. Bundy Co., Indianapolis (Specializing in compressed tablets and pills).

Pitman-Moore Company, Indianapolis (Also producers of hog cholera serum in a very large way).

Swan-Myers Company, Indianapolis.

Swan-Williamson Company, Indianapolis.

Eli Lilly & Company, Indianapolis and Greenfield.

The writer was recently delegated by Governor Goodrich, through Dr. Chas. P. Emerson, Chairman of the Medical Section of the State Council of Defense, to make a survey of the pharmaceutical and biological resources of the State of Indiana. Calling together representatives of all the houses, this survey was made and reported to the State authorities. The information secured by this survey was a revelation to even those of us who should have been informed. It is quite possible that the output of pharmaceuticals of this State is only exceeded in volume by but one other State in the Union. We discovered that the total annual output of these houses, when based on most conservative figures, exceeded anything of which we had thought—if we had thought at all. It was found that liquid preparations of various kinds were supplied in amounts approximating five million pounds annually. That in the matter of compressed tablets of various kinds and uses, the units would approach the number of dollars in the first Liberty Loan. We found an output of empty gelatin capsules exceeding a half billion, and other things in proportion. Realizing fully that quantity is not a criterion of success and usefulness, it was gratifying to find all establishments observing the latest methods of scientific standardization and a general air of enterprise and progress throughout the guild.

It would seem that this brief account of manufacturing pharmaceutical progress in Indiana would hardly be complete without the mention of the industry devoted to the collection of crude drugs. Indiana has always been a great State for ginseng and hydrastis, although the supplies of both of these have now become nearly exhausted. At Madison, Ind., Sulzer Brothers have for many years conducted a large business in this line. Their supplies come from Southern Indiana, Kentucky, Tennessee and other points south of the Ohio River. They supply not only Indiana manufacturers but those located in other States and also ship quantities abroad. It is quite possible that in this concern Indiana has the largest facilities for supplies of native drugs.

Manufacturing pharmacy in Indiana is also well supplied in the matter of alcohol, as we are in the corn belt and we have distilleries of great capacity for the manufacture of this essential solvent and preservative.

Again, we are well served in the matter of bottles, having a number of excellent plants for the manufacture of this indispensable item.

A little start has been made in the matter of drug culture, in both an experimental and commercial way.

Another factor of great importance in the development of the drug business in Indiana is the fact that since the early day the State has had an excellent system of wholesale distribution by houses in Indianapolis, Ft. Wayne, Terre Haute, Evansville, and Richmond. Today there are seven wholesale drug houses serving the retail druggists of Indiana and portions of Ohio, Illinois and Kentucky. This is a fewer number than existed in former years, but the volume of business handled is much greater and the service constantly improving.

I would not like to close this paper without a mention of some of the pioneers in the wholesale drug business, which is so closely allied and so essential to the retailer and the manufacturer.

Mr. Augustus Kiefer was one of the pioneers of the modern wholesale drug guild entering the business in 1872 in Indianapolis, and when he passed away a few years ago he left one of the most thoroughly organized institutions in the United States.

Mr. Daniel Stewart, another pioneer, came to Indianapolis in the early day from Decatur County, forming the firm of Stewart & Barry, which finally became the Daniel Stewart Company, doing business in a large and efficient manner.

Recently these two concerns have merged into the Kiefer-Stewart Company.

Another old firm in service was Ward Brothers, of Indianapolis, the surviving member of that firm being Mr. Marion Ward, now of the Mooney-Mueller-Ward Company, which concern has a large and useful plant, being a merging of the interests of Mooney-Mueller Drug Company and Ward Brothers Drug Company.

E. H. Bindley & Company and Cook, Black & Hoffman, of Terre Haute, are also pioneer houses.

Chas. Leich & Company, Evansville, date back many years and have served that section of the State and Kentucky acceptably.

A. G. Luken & Co., of Richmond, supply a certain section of Eastern Indiana and Western Ohio.

The youngest member of the guild is the Ft. Wayne Drug Company, that splendidly serves the northeast section of Indiana with portions of Ohio and Michigan.

With all of these interests working harmoniously together to serve that which is best in medicine and pharmacy, it would certainly seem that there is comparatively little left to be desired other than a continuation of scientific and commercial growth.

Altogether, those of us who have been a part of this development in our Hoosier State may possibly be pardoned for expressing a degree of satisfaction in the development of manufacturing pharmacy in Indiana in the last generation.

PROCEEDINGS OF THE LOCAL BRANCHES

"All papers presented to the Association and its branches shall become the property of the Association, with the understanding that they are not to be published in any other publication than those of the Association, except by consent of the Committee on Publication."—By-Laws, Chapter X, Art. III.

Reports of the meetings of the Local Branches should be mailed to the Editor on the day following the meeting, if possible. Minutes should be typewritten, with wide spaces between the lines. Care should be taken to give proper names correctly, and manuscript should be signed by the reporter.

CINCINNATI.

Fifth Annual Report of the Secretary, Charles A. Apmeyer:

The session 1917–18 opened with a meeting held at the Cincinnati College of Pharmacy Building, October 9, 1917, President Louis Werner presided.

After the Secretary had read the full report of the May 8th meeting, the last meeting of the preceding session, and mentioning the sad bereavements this branch sustained during the interim to the opening of the 1917–18 session, all of which report was duly approved; Mr. Julius Greyer, Treasurer, made a statement regarding the financial condition of this branch, stating in part: Our branch has done a great deal of good in the past and it will do more the coming season, if sufficiently encouraged. Our meetings have been most interesting, beneficial and instructive to all who attended them, and every pharmacist, whether member of the branch or not, is welcome and should avail himself of the privilege and attend our meetings. Again—our present by-laws call for only 50 cents dues, which are absolutely insufficient to meet even the most necessary expenses, and this is a great hindrance to the promotion of any move on the part of the officers, by which interesting and instructive material for our meetings might be secured.

At this meeting Prof. C. T. P. Fennel presented his masterly lecture on "Pharmacology—Pharmacy of Today." Prof. Fennel states that Pharmacology is really a modern term, and does not mean alone Pharmacy, but according to the Pharmaceutical Syllabus, recommended by the National Committee, representing the Boards and Schools of Pharmacy of the United States, includes Materia Medica, Botany, Chemistry, Pharmacy, Physics, Arithmetic, Latin, as well as Pharmacognosy, Toxicology, Posology and Biology, not omitting even Commercial Training in its curriculum. Prof. Fennel expresses himself frankly as concerns the advancements and changes that have been made in the direction of pharmacy, including Pharmacology and its connection with medicine in general. He calls attention to the fact that the old time compounds have been practically displaced through the changes that have taken place in medical education. He shows how insidiously and irresistibly the practice of Pharmacy has undergone a revolution and that the pharmacists of the olden time have been practically relegated to obscurity, very few now being in a position to make a living by old-time processes and methods.

This same lecture was continued by Prof. Fennel at the November meeting, held at the Hotel Gibson. He again pointed out the danger to the pharmacist of being almost entirely alienated from his pharmaceutical manipulations and efforts, greatly due to the energetic progressive processes employed by the manufacturing pharmaceutical houses. Pharmacy is gradually drifting away from us; the medical profession has been efficient in teaching her institutions to live up to requirements; the pharmaceutical profession, however, has become so governed and legalized, either by U. S. P. or N. F. standards and National Pharmaceutical Syllabus, that these very standards set forth seem almost to be a bar to higher educational or manipulative processes, for outside of pharmacy there is not a single other science which is restricted by a legal standard.

Hon. Frank H. Freericks chose for his subject: "The New Income Tax, and the Sale, Taxation and Use of Non-Beverage and Special Denatured Alcohol." Mr. Freericks presented the provisions of the New Income Act by means of discussion, charts and questionnaire, efficiently instructing his attentive audience in the various obligations of this new law.

The principal speaker at the December meeting was Prof. Theo. D. Wetterstroem, who presented a very interesting and instructive report of Comments on the U. S. P. and N. F., same being greatly appreciated by the members.

Dr. E. P. Zeumer delivered a highly interesting lecture at the January meeting, which was held at the offices of the American Druggists' Fire Insurance Company. Dr. Zeumer's lecture was illustrated by stereopticon views, the subject being "The Manufacture, Preparation and Uses of Antitoxins and Serums." An abstract of this lecture was published in the JOURNAL. (See January issue JOURNAL, p. 184.)

At the February meeting your Secretary called attention to the fact that this branch now celebrates its fifth anniversary, saying: On February 12, 1913, seventeen gentlemen of the pharmaceutical profession assembled at Lloyd's Library to form a Cincinnati Branch of the A. Ph. A. The professional, the medical, the manufacturers', as well as the retail druggists' interests were represented, and met in an earnest desire to further the objects of the American Pharmaceutical Association, which are: To advance the science and art of pharmacy, and to improve the condition of pharmaceutical practice by stimulating research and the development of improved methods, by diffusing scientific and technical knowledge, by fostering sound pharmaceutical education, by upholding the dignity of pharmacy and demonstrating to the public its importance and the necessity as a matter of public safety, of restricting pharmaceutical practice to trained pharmacists, by extending the field of usefulness of the pharmacist to the people, by promoting the enforcement of due observance of established standards for the identity, purity and strength of medicines, by aiding in the suppression of empiricism, in the regulation of the use of dangerous and habit-forming drugs and in the protection of the public health; by maintaining respect for ethical standards in the practice of pharmacy; by promoting relations of comity and mutual respect between physicians and pharmacists; in short in all proper ways to promote the true welfare of Pharmacy and Pharmacists.

I believe that the Cincinnati branch has so far fulfilled its mission, and with the further support and endeavor of our members much good may be accomplished to the credit of not only the Cincinnati branch but also of the parent body.

The members were instructively entertained at the March meeting by E. V. Kyser, Ph.G., whose lecture—"Importance of the American Crude Drug Industry"—was well received, and at its conclusion led to interesting discussions. Dr. Kyser says: The American Drug Flora is very large and widely distributed; there are several hundred varieties of drug plants of therapeutic value growing wild in the United States. The growing of drugs as ornaments, the cultivation of wild drugs for personal and commercial purposes has been prevalent since the early colonization. The diversity and importance of our Flora led many of the European Governments to send patrons to this country, who made explorations of our Eastern States during the latter part of the 18th and the early part of the 19th century. Among those early visitors were many eminent botanists, who contributed largely to valuable books on American plants. Their writings were on the general Flora, but contained much of interest concerning medicinal plants.

Andre Michaux, under the patronage of the French Government, during his several years of exploration sent back to Europe over 2500 specimens of trees, shrubs and plants.

Mr. Fraser, a Scotchman, under the patronage of the Russian Government, did much work on our Flora.

Mr. John Lyon, of Great Britain, was an enthusiastic collector of our plants and contributed many of our species to the English Gardens.

F. A. Michaux, son of Andre, traversed the Eastern States, the result of his work being found in his "The Forest Trees of America."

Thomas Mitchell, an Englishman, contributed largely to the discovery and elucidation of the Flora of North America.

The Standard Supply Table of the indigenous plant remedies for field and sick in General Hospitals consists of 70 drugs of recognized therapeutic value, many of which are official drugs in the present and former pharmacopoeias.

The April meeting was partly devoted to a business meeting, after which the President called upon Dr. C. T. P. Fennel, who delivered a very interesting lecture on Pharmacology, giving and enumerating the vast number of products that may be obtained

by the destructive distillation of wood, and shows how by fractional distillation at the various degrees of heat the many products are separated, such as pyroligneous acid, acetone, etc. He then took up the coal distillation, showing the formation and separation of the numerous products, such as the various bitumen pitch residues, crude oil, carbolic acid, benzine, anthracene, naphthalene, etc. A very interesting part of the Doctor's lecture is the presentation of samples of the progressive distillates obtained by him.

The branch now has a membership of 58. We had the misfortune of losing one of our good members, Mr. Rudolph C. Fack, whose death occurred March 12, 1918.

A pleasing incident during the session 1917–18 is the appointment of member Dr. C. T. P. Fennel to the Professorship of Materia Medica at the University of Cincinnati.

CHAS. A. APMEYER, *Secretary.*

May 21, 1918.

The annual election of officers of the Cincinnati Branch, A. Ph. A., took place at Lloyd Library, May 21, 1918: *President,* Louis Werner; *First Vice-President,* Frank H. Freericks; *Second Vice-President,* Bertha Ott; *Treasurer,* Dr. Frank Cain; *Secretary,* Charles A. Apmeyer; *Member Executive Committee,* E. H. Thiesing.

After installation of officers a spirited discussion took place regarding the furnishing to the soldier and sailor better pharmaceutical service, of eliminating as much as possible the tin-canned medication now furnished to our forces, the possible establishment of true pharmacies at cantonments in connection with Y. M. C. A., Red Cross, Knights of Columbus, and similar humanitarian efforts, all of which discussion finally led to the adoption of the following resolution.

CHAS. A. APMEYER *Secretary.*

Resolution offered by Mr. Frank H. Freericks at the May 1918 Meeting of the Cincinnati Branch of the A. Ph. A. and adopted by a unanimous vote:

The Cincinnati Branch of the A. Ph. A. convinced;

That, the health and life of the nations young men in the Army require medicine freshly prepared which can be supplied them only through a staff of men pharmaceutically trained;

That, the medical staff of our Army, now includes thousands of physicians taken from civil life, whose successful treatment of disease has been dependent upon prescribing medicines extemporaneously and freshly prepared, who will be greatly hindered if confined to the use of a restricted list of so-called "Canned Medicines;"

That, The Congress seems unimpressed with the immediate need for establishing a Pharmaceutical Corps in our Army as found necessary by nearly all other Nations, possibly controlled in its lack of action by the opinion of Army Medical Men whose experience has been restricted to the use of manufactured medicines in our heretofore limited Army requirement and on that account without sufficient knowledge of the advantage, need and superiority of freshly and extemporaneously prepared medicines as secured in civil life, therefore

Resolves, to request the National Pharmaceutical Service Association, the National Association of Retail Druggists and the American Pharmaceutical Association, to confer through representatives of retail pharmacy and with officials of the organizations hereinafter named upon the feasibility of establishing completely equipped pharmacies in charge of a staff of qualified pharmacists in connection with Y. M. C. A. and K. of C. Army Establishments, through the patriotic self sacrifice of pharmacists, supported by the relatives and friends of the young men now in the service of their country, to the end that they may not suffer and die for the want of proper medication and so that this voluntary experience may at once serve to satisfy the authorities of the need for complete pharmaceutical equipment and properly trained pharmacists in our Army.

DETROIT.

The regular meeting of the Detroit Branch of the American Pharmaceutical Association was called to order in the Wayne County Medical Bldg., May 17th, President Kimmich presided. The minutes of the last meeting were read and approved. A letter was read from D. J. Coleman, Ensign U. S. N. R. F. Officer in Charge United States Navy Recruiting Station, asking the Detroit Branch to assemble to meet Col. Theodore Roosevelt and to participate in the Memorial Day parade, May 30th. A motion was made that the Secretary write a letter to Dr. Coleman saying that on account of the nature of our organization that we could not participate. The

treasurer's report was read and accepted. A motion was made and carried that the secretary write a letter of thanks to Fred'k Stearns & Co., in recognition of the appreciation of the branch for their kindness in contributing the printing necessary for the year's work. A motion was made and carried that $10.00 be given to Mr. Nelson, the steward of the Wayne County Medical Bldg., as a token of appreciation of his services. A motion was made and carried that the September meeting for the year 1918 be omitted. A motion was presented in writing by E. R. Jones that the By-Laws be amended to read "Meetings to be held from October to May of each year inclusive." Since this necessitates a changing of the By-Laws, the motion was laid on the table until the October meeting, at which time action will be taken. The Nominating Committee made the following report:

President—E. R. Jones, *Vice-President*—G. M. Schettler, *Secretary*—May Strawn, *Treasurer*—Chas. F. Mann, *Chairman of the Program Committee*—G. M. Grommet, and *Councilor*—L. A. Seltzer.

A motion was made that the report of the nominating committee be accepted. Carried. Nominations were asked from the floor and a motion was made and seconded that nominations be closed. Carried. A motion was made and carried that the rules be suspended and the secretary authorized to cast an unanimous ballot for the names as presented by the nominating committee.

A motion was made that the branch go on record as favoring the Edmonds bill and the secretary send all the representatives and senators of the state of Michigan a letter to this effect. Carried.

Miles Turpin, General Sales Agent of the Todd Protectograph Co., gave an interesting talk on check protection as carried out by the system which is put on the market by his company. The complete outfit includes a machine and special paper which protects the name of the person whose signature is appended to the check, as well as the amount to be paid. Since the laws of the United States say that a person must pay all that is above his signature on a check he called attention to the fact that a man who has a small capital needs protection even more than large concerns who can charge occasional losses to Profit & Loss. W. A. Hall, Ph.B., presented some interesting and unusual prescriptions to the members present for their comments as to the best method of compounding. This created quite a little discussion. A motion was made and carried that a vote of thanks be extended to the speakers and that a vote of appreciation be extended to Dr. Stevens in recognition of his interest in the branch and his attendance at the meetings.

The retiring president, Mr. Kimmich, gave a short talk in appreciation of the coöperation extended to him by the members of the branch and formally turned the office over to the new president, Mr. Jones, who gave a short inaugural address.

MAY E. STRAWN, *Secretary*.

PHILADELPHIA.

The last monthly meeting of the 1917–1918 sessions of the Philadelphia Branch of the American Pharmaceutical Association was held at the Philadelphia College of Pharmacy on May 20th, with President McNeary in the chair. Due to the extent of the proposed program, business matters were hurried through and the guest of the evening, Dr. A. R. L. Dohme of Baltimore invited to explain his tentative plan for the federation of all pharmaceutical associations.

Dr. Dohme's able presentation was very well received and while many had come to listen with biased minds there was no one who found in the well-thought-out talk, anything which might be called impracticable or impossible. Before the meeting there were those who said that Arcadia was a fine place to dream about but that we were not to forget that we still live on old mother earth. These same persons after the close of the meeting argued that if the plan ever came to pass Pharmacy would probably come into its own. There is hardly the need to review Dr. Dohme's plan, since it has been given much publicity through the journals. It was very clearly pointed out by the speaker that the plan proposed was simply formulated in order to give a basis to work upon and that there would be the necessity, no doubt, of reconstructing and altering a good portion of it. A good start is a race half won was the axiom upon which the President of the A. Ph. A. worked and while he felt that it would take years for the plan to mature he had no doubt that with coöperation of all concerned the proposition could be carried out to a successful conclusion and Pharmacy through it would take a new hold on society and assume its rightful "place in the sun."

Dean Lawall, leading the discussion of the address said in part that he fully agreed with the speaker as to the need for this federation and the advantages accruing from such a step forward. He also felt that the process of amalgamation would require time and the sincere coöperation of all pharmaceutical interests. He stated that the best plan would probably be one that would not be too radical and one which would be comprehensive but which should be given plenty of time to develop. It was suggested that plans should be made for arranging to have all the associations meet at the same time and at the same place one of the next few years and in this way start things going harmoniously. The service bureau outlined by Dr. Dohme was an excellent idea, stated Dean Lawall and could be elaborated so as to include any service which might be helpful to the pharmacist. Other speakers were Dr. Sturmer, Prof. Fischelis, Dr. Stewart, Dr. Lowe, E. G. Eberle and J. W. England. Mr. England moved and E. G. Eberle seconded that the thanks of the Branch be extended to Dr. Dohme for his excellent presentation and the motion was duly approved by a rising vote.

Professor Gershenfeld of the faculty of the Philadelphia College of Pharmacy then read a very interesting paper on "Bacteriology and Its Relation to Pharmacy." He pointed out the very important fact that pharmacists with their chemical training were better equipped as bacteriologists than the average physician and that there was a wonderful field in the practice of this science for the young pharmacist who wishes to work along professional lines. The history of the science was carefully outlined from its humble start to the limitless boundaries which it has reached at the present time. The paper was discussed by Professors Stroup and Sturmer. The meeting was probably the most successful and interesting of the season and well attended.

IVOR GRIFFITH,
Secretary.

COUNCIL BUSINESS

A. PH. A. COUNCIL LETTER NO. 15.

PHILADELPHIA, May 14, 1918.

To the Members of the Council:

Motion No. 22 (*Approval of Program for 1918 Annual Meeting*) has received a majority of affirmative votes. The Committee on Program asks that the Council Meeting scheduled for 7.00 P.M., Thursday be changed to 5.00 P.M., and the second general session of the Association be changed from 8.00 P.M. to 8.15 P.M. This will give time for an illustrated lecture by Dr. H. H. Rusby, entitled "The Indications of Medicinal and Poisonous Properties in Plants" at 7.30 P.M. to 8.15 P.M. If there are no objections these changes in the program will be made.

Motion No. 23 (*Election of Members: applications Nos. 115 to 133 inclusive*) has received a majority of affirmative votes.

Motion No. 24 (*Approval of Award of a Joseph P. Remington Medal by New York Branch*). Moved by Jeannot Hostmann, seconded by H. V. Arny, that the Council grant the request of the New York Branch for the consent and moral support of the parent organization in the awarding of the proposed Joseph P. Remington Medal (C. L. No. 14).

Motion No. 25 (*Election of Members*). You are requested to vote on the following applications for membership:

No. 134. Paul Hapke, U. S. S. Brooklyn, care Postmaster, San Francisco, Cal., rec. by Wm. B. Day and J. F. Rupert.

No. 135. Edmund D. Pinter, 100 Danforth Ave., Jersey City, N. J., rec. by Hugo H. Schaefer and Wm. B. Day.

No. 136. Charles J. Chapman, 62 Maiden Lane, New York City, N. Y., rec. by Hugo H. Schaefer and Wm. B. Day.

No. 137. John F. Matthes, 14 N. Franklin Street, Chicago, Ill., rec. by Wm. B. Day and E. N. Gathercoal.

No. 138. M. M. Taylor, 602 Franklin Street, Tampa, Fla., rec. by Ernest Berger and Wm. B. Day.

No. 139. Brua Clifford Goodhart, 239 S. 11th Street (Locust), Phila., Pa., rec. by Franklin M. Apple and W. Wilson McNeary.

No. 140. Oscar Dowling, La. State Board of Health, New Orleans, La., rec. by R. F. Grace and Edw. H. Walsdorf.

No. 141. Oscar Baker Elmer, 540 Magazine Street, New Orleans, La., rec. by R. F. Grace and Adam Wirth.

No. 142. Earl A. Means, 281 Greene Ave., Brooklyn, N. Y., rec. by Hugo H. Schaefer and Turner Currens.

No. 143. William R. Jackson, 281 Greene Ave., Brooklyn, N. Y., rec. by Hugo H. Schaefer and Turner Currens.

No. 144. Antonio Gavalda y Milanes, 38 Marti, Artemisa, Cuba, rec. by Jose G. Diaz and Jose P. Alacan.

J. W. ENGLAND,
415 N. 33RD STREET. *Secretary.*

Treasurer Whelpley submits the following data: *Resigned since April 2, 1918:* Mrs. A. P. Clark, 124 S. Beach St., Daytona, Fla.; A. L. Stroup, 1436 Cypress St., Pueblo, Colo.; J. C. Palmer, The Dalles, Ore.; B. C. Steves, 48 W. 130th St., New York, N. Y.; and A. E. Lathrop, P. O. Block, Main Street, Simsbury, Ct.

A. PH. A. COUNCIL LETTER NO. 16.

PHILADELPHIA, June 1, 1918.

To the Members of the Council:

Motions No. 24 (Approval of Award of Joseph P. Remington Medal by New York Branch) and No. 25 (Election of Members; applications Nos. 134 to 144 inclusive) have each received a majority of affirmative votes.

Motion No. 26 (Election of Members). You are requested to vote on the following applications for membership:

No. 145. José E. Fernandez y Valdez, Santa Clara, Cuba, rec. by Philip Asher and Wm. B. Day.

No. 146. W. Clifford Raynor, Westhampton, N. Y., rec. by William C. Anderson and Archie P. Lohness.

No. 147. George Casper Deffaa, 168 East 66th Street, N. Y. City, N. Y., rec. by Hugo H. Schaefer and Jeannot Hostmann.

No. 148. Grace Irene Harper, 19 W. 101st Street, New York, N. Y., rec. by H. V. Arny and May Agnes O. C. Davis.

No. 149. Mendel Zagat, Prospect Ave. and 156th Street, Bronx, New York, N. Y., rec. by Hugo H. Schaefer and Jeannot Hostmann.

No. 150. George W. Pegg, 113 W. 18th Street, New York, N. Y., rec. by L. E. Warren and W. S. Hubbard.

No. 151. Conrad Edward Langfield, Northville, Mich., rec. by Frank L. McCartney and Turner F. Currens.

No. 152. Morris Adoff, 546 Claremont Parkway, Bronx, New York, N. Y., rec. by Jacob Diner and Gustave Horstman.

No. 153. Max Bergman, 1570 Bathgate Ave., New York, N. Y., rec. by Jacob Diner and Gustave Horstman.

No. 154. Isaac Berniker, 1735 Washington Ave., New York, N. Y., rec. by Jacob Diner and Gustave Horstman.

No. 155. Benjamin Billig, 4003 Third Ave., New York, N. Y., rec. by Jacob Diner and Gustave Horstman.

No. 156. James Cecalello, 301 East 150th Street, New York, N. Y., rec. by Jacob Diner and Gustave Horstman.

No. 157. Simon Doniger, 79 Sherman Ave., New York, N. Y., rec. by Jacob Diner and Gustave Horstman.

No. 158. Irving A. Edelstein, 1728 Crotona Park East, N. Y., rec. by Jacob Diner and Gustave Horstman.

No. 159. Bernard Eohs, 2403 Walton Ave., New York, N. Y., rec. by Jacob Diner and Gustave Horstman.

No. 160. Isadore Flomenbaum, 1129 Vyse Ave., Bronx, N. Y. City, N. Y., rec. by Jacob Diner and Gustave Horstman.

No. 161. Henry Frank, 2071 Vyse Ave., Bronx, N. Y. City, N. Y., rec. by Jacob Diner and Gustave Horstman.

No. 162. Louis Friedman, 668 Teuton Ave., Bronx, New York, N. Y., rec. by Jacob Diner and Gustave Horstman.

No. 163. Joseph Greenberg, 1047 Teller Ave., New York City, N. Y., rec. by Jacob Diner and Gustave Horstman.

No. 164. Samuel Morriss Goodman, 131 Spruce Street, Newark, N. J., rec. by Jacob Diner and Gustave Horstman.

No. 165. Max M. Hager, 1484 Hoe Ave., Bronx, New York, N. Y., rec. by Jacob Diner and Gustave Horstman.

No. 166. Max Heimovitch, 1078 Stebbins Ave., New York, N. Y., rec. by Jacob Diner and Gustave Horstman.

No. 167. David Israel, 1037 Teller Ave., New York, N. Y., rec. by Jacob Diner and Gustave Horstman.

No. 168. Joseph Robert Kerr, 500 W. 172nd Street, New York, N. Y., rec. by Jacob Diner and Gustave Horstman.

No. 169. Julius Kerr, 500 W. 172nd Street, New York, N. Y., rec. by Jacob Diner and Gustave Horstman.

No. 170. Nathan Kerr, 850 E. 150th Street, New York, N. Y., rec. by Jacob Diner and Gustave Horstman.

No. 171. Alexander Kornfield, 1065 Morris Ave., New York, N. Y., rec. by Jacob Diner and Gustave Horstman.

No. 172. Bruno Kanders Kuhe, 821 Cauldwell Ave., New York, N. Y., rec. by Jacob Diner and Gustave Horstman.

No. 173. John D. Lore, 333 Second Ave., New York, N. Y., rec. by Jacob Diner and Gustave Horstman.

No. 174. David R. Mantell, 71 East 121st Street, New York, N. Y., rec. by Jacob Diner and Gustave Horstman.

No. 175. Max Matlin, 2257—2nd Ave., New York, N. Y., rec. by Jacob Diner and Gustave Horstman.

No. 176. Bernard Miller, 178 Brook Ave., New York, N. Y., rec. by Jacob Diner and Gustave Horstman.

No. 177. Jacob B. Moonves, 1426 Stebbins Ave., New York, N. Y., rec. by Jacob Diner and Gustave Horstman.

No. 178. Eugene Nagin, 609 East 170th Street, Bronx, New York, N. Y., rec. by Jacob Diner and Gustave Horstman.

No. 179. Eugene Tracy O'Kane, 299 Willis Ave., New York, N. Y., rec. by Jacob Diner and Gustave Horstman.

No. 180. Julius M. Pakchar, 367 South 2nd Street, Brooklyn, N. Y., rec. by Jacob Diner and Gustave Horstman.

No. 181. John Paolandonis, 310 Gilbert Street, Utica, N. Y., rec. by Jacob Diner and Gustave Horstman.

No. 182. Lawrence E. Pedroni, 1636 Melville Street, New York, N. Y., rec. by Jacob Diner and Gustave Horstman.

No. 183. Oreste Petretti, 557 Fordham Road, Bronx, New York, N. Y., rec. by Jacob Diner and Gustave Horstman.

No. 184. Harry Rabinowitz, 364 E. 4th Street, New York, N. Y., rec. by Jacob Diner and Gustave Horstman.

No. 185. Naftul-Herz RiaCoy, 1525 Washington Ave., Bronx, New York, N. Y., rec. by Jacob Diner and Gustave Horstman.

No. 186. Flower H. Reige, 77 Van Duzer Street, Tompkinsville, N. Y., rec. by Jacob Diner and Gustave Horstman.

No. 187. Abraham Solomon, 14 West 115th Street, New York, N. Y., rec. by Jacob Diner and Gustave Horstman.

No. 188. Joseph Shapiro, 160 W. 119th Street, cr. Licker, New York, N. Y., rec. by Jacob Diner and Gustave Horstman.

No. 189. Charles Shavel, 204 Columbia Street, Brooklyn, N. Y., rec. by Jacob Diner and Gustave Horstman.

No. 190. Joseph Samsonoff, 1489 Vyse Ave., New York, N. Y., rec. by Jacob Diner and Gustave Horstman.

No. 191. Charles Silkes, 85 Attorney Street, New York, N. Y., rec. by Jacob Diner and Gustave Horstman.

No. 192. Samuel Stein, 855 Home Street, Bronx, New York, N. Y., rec. by Jacob Diner and Gustave Horstman.

No. 193. Sidney Weinstock, 879 Freeman Street, Bronx, New York, N. Y., rec. by Jacob Diner and Gustave Horstman.

No. 194. William M. Smith, 1720 Green Street, Philadelphia, Pa., rec. by W. W. McNeary and Ivor Griffith.

No. 195. Andrew Maguire, 6543 Sheridan Road, Chicago, Ill., rec. by Wm. B. Day and E. N. Gathercoal.

No. 196. Roth Eardon Weimer, 413 Charles Street, Mt. Oliver, Pittsburg, Pa., rec. by J. A. Koch and F. J. Blumenschein.

No. 197. Edwin A. Brown, 101 West 3rd Street, Winoma, Minn., rec. by C. H. Rogers and F. J. Wulling.

No. 198. James Lewis Hughes, 2108 1st Ave., Birmingham, Ala., rec. by J. W. England and E. G. Eberle.

No. 199. William Jackson Adams, 1901—2nd Ave., Birmingham, Ala., rec. by J. W. England and E. G. Eberle.

No. 200. Jonathan Schmitter, Gypsum, Kansas, rec. by L. D. Havenhill and C. M. Sterling.

No. 201. Gillis Q. Lake, 6th and Minnesota Streets, Kansas City, Kans., rec. by J. S. Chism and Wm. B. Day.

No. 202. Frank W. Kraemer, 5969 South Boulevard, Chicago, Ill., rec. by Wm. B. Day and E. N. Gathercoal.

No. 203. William Leonard Friedman, 1833 N. 20th Street, Philadelphia, Pa., rec. by Charles H. LaWall and Louis Gershenfeld.

No. 204. Jacob A. Topf, 2000 Larrabee Street, Chicago, Ill., rec. by Wm. B. Day and E. N. Gathercoal.

J. W. ENGLAND,
Secretary.

415 N. 33RD STREET.

. . . . . .

Treasurer H. M. Whelpley reported the following as of "Unknown residence:"

Allande, Armand J., Hammond, Louisiana.

Berkenketter, Gerhard F., Hamill, South Dakota.

Berry, Everly N., 116 Main St., Twin Falls, Idaho.

Dunphy, Richard M., U. S. S. Castine, Vera Cruz, Mexico.

Fitzsimmons, George E., 1045 Lexington Ave., New York, N. Y.

Forbing, John W., 2435 Brown St., Omaha, Nebraska.

Guenther, Harry F. J., Baylor Univ. College of Med., Dallas, Texas.

Hamner, James F., Recruit Depot, Ft. McDowell, Calif.

Harris, Samuel J., Sgt. H. C., U. S. A., 3131 Wash. St., San Francisco, Cal.

Pigott, John E., Flowers, Mississippi.

Roman, Miguel A., 630 S. Ashland Ave., Chicago, Ill.

Schlosser, Roy B., 659 W. Franklin St., Baltimore, Md.

Schulz, Emiel, Sgt. 1st Cl. H. C., U. S. A., Reg. Hosp., Marfa, Texas.

Stewart, Harry E., Box 1090a, Jacksonville, Fla.

Thoroman, Ralph R., 3912 Calumet Ave., Chicago, Ill.

Zuck, F. J., 1028 Missouri St., Lawrence, Kans.

Peczos, Joseph, 419 Hancock Ave., Bridgeport, Ct.

CORRESPONDENCE

ST. LOUIS, MO., May 25, 1918.

THE EDITOR:

Your postal of the 21st inst. was received. The amount of $5,369.49 charged to Year Book No. 4 should have been for Year Book No. 3 and Year Book No. 4.

The amounts are as follows:

Year Book, Vol. 3	$2,456.98
Year Book, Vol. 4	2,912.51
Total	$5,369.49

(Signed) H. M. WHELPLEY,
Treasurer of A. Ph. A.

W. B. DAY, *General Secretary.*

The above has reference to the second line on p. 482, May issue of the JOURNAL, of the Treasurer's Report, and to the fifth line from bottom of same page.

DRAFT BOARDS DETERMINE CLASSIFICATION.

THE EDITOR:

As you may know, the question of the increasing depletion of the ranks of pharmacists by the draft and the consequent diminution of pharmaceutical service to the civilian public has a number of times been brought to the attention of officials at Washington with the suggestion that drafted pharmacists be put into Class V. Provost Marshal General E. H. Crowder

has made statements relating to the matter to the effect that under the Selective Service Regulations there is no authority to grant deferred classification, except by the application of the rules for classification by the local and district boards. General Crowder further stated that the district boards have exclusive original jurisdiction to hear and determine all questions on claims for deferred classification by or in respect of persons engaged in industries found to be necessary to the maintenance of the military establishment or the effective operation of the military forces or the maintenance of the national interests during the emergency. The General does not attempt to define a necessary enterprise. He states that what might be a necessary enterprise for one locality might not be for another, and confusion and error would likely arise if a general attempt were made to prescribe what are and what are not necessary enterprises within the meaning of the Selective Service Regulations.

You will note, therefore, that the local and the district draft boards have the power to determine in individual cases whether or not a drafted pharmacist should be placed in a deferred classification. It occurs to me in this connection to suggest that this information should be given the widest publicity among pharmacists and I think it would be entirely proper for you to publish a statement covering this matter in the next issue of the JOURNAL. It cannot be considered unpatriotic to urge this matter upon the attention of pharmacists because there are many cases in which entire communities have been deprived of pharmaceutical service. The Government surely does not want this to be so, especially in view of the fact that the many pharmacists who are in actual service, are not recognized as anything else than privates or at most master sergeants. (Signed) FREDERICK J. WULLING.

THE PHARMACIST IN THE ARMY MEDICAL DEPARTMENT.*

TO THE EDITOR (JOURNAL A. M. A.):

There seems to be a well-defined attitude toward pharmacists in the Army—that of almost completely ignoring their professional distinction, along with an amazing indifference as to their proper place and utilization. Needless to say, such a policy results not only lamentably as regards the pharmacist's status in the Army, but his professional value is lost to the Medical Department.

It is also quite apparent that since modern war machines are essentially and thoroughly businesslike in structure and character, modern methods must be employed to achieve success. It is therefore logical and imperative that every branch and wing of that complex machine be conducted on the modern principle of specialization. The trained man, the specialist, was never more desirable, never before absolutely indispensable. Such a principle is the very backbone of all modern institutions, and invariably spells success. Division of labor and centralized effort are built, supported and owe their existence to the specialist—the trained man.

The pharmacist is a specialist, trained in a part of medical science that cannot be ignored without affecting the efficiency of the Medical Department as a whole. A pharmacist's business ability to buy and distribute should be taken advantage of in medical supply depots. His experience would help to correct mistakes in buying and avoid inproper packing for distribution of such supplies. This part cannot be emphasized too strongly, since it would effect an enormous economy hardly ever appreciated by non-professionals. Likewise, a pharmacist would be invaluable at large base hospitals, and his recognition becomes imperative when the dangers of the improper compounding of precriptions by non-trained men are fully realized.

Aside from sentimental considerations for the pharmacist as an underpaid, neglected professional, his recognition is dictated by common sense and cannot fail to justify itself from a business and economical standpoint. Never would such a step be more timely, never was it more obvious and desirable. Indicating criticism of the present system of the neglected pharmaceutical branch of the Medical Department could be easily brought to light. The method of packing for distribution could be pointed at as wasteful, which a professional eye could readily detect and condemn. Immense savings could be gained even in the small Army dispensaries were the business end of medical supplies placed in the hands of the logical man—the pharmacist. As for prescriptions, their importance and the skill required for their preparation cannot be overlooked.

* Reprinted from the Correspondence Columns, *Journal A. M. A.*, May 25, 1918, p. 1562.

The idea that a bright private could be taught to perform the few simple operations is not only fallacious but also fraught with dangers.

Perhaps the following incident will serve to illustrate the folly of just such a belief: At an examination for promotion to the grade of sergeant, the aspirant was asked what a "C. C. pill" is. "Any pill containing one cubic centimeter," was his immediate reply. Another applicant was asked how to administer a Seidlitz powder. "Place the powder on the patient's tongue and wash it down with water," was his answer.

Pharmacy is a science—as exacting and important as the science of surgery—and a pharmacist's place should be second only to that of the surgeon. Are civilians more entitled to protection against mistakes of unskilled hands than soldiers?

ALBERT WHITE,
Post Dispensary, Corozal, C. Z.

MILITARY INSTRUCTION FOR COLLEGE STUDENTS.

To the Presidents of all Institutions of Collegiate Grade:

In order to provide military instruction for the college students of the country during the present emergency, a comprehensive plan will be put in effect by the War Department, beginning with the next college year, in September 1918. The details remain to be worked out, but in general the plan will be as follows:

Military instruction under officers and non-commissioned officers of the Army will be provided in every institution of college grade, which enrolls for the instruction of 100 or more able-bodied students over the age of eighteen. The necessary military equipment will, so far as possible, be provided by the Government There will be created a military training unit in each institution Enlistment will be purely voluntary, but all students over the age of eighteen will be encouraged to enlist. The enlistment will constitute the student members of the Army of the United States, liable to active duty at the call of the President. It will, however, be the policy of the Government not to call the members of the training units to active duty until they have reached the age of twenty-one, unless urgent military necessity compels an earlier call. Students under eighteen and, therefore, not legally eligible for enlistment, will be encouraged to enroll in the training units. Provision will be made for coordinating the Reserve Officers' Training Corps system, which exists in about one-third of the collegiate institutions, with this broader plan.

This new policy aims to accomplish a twofold object: first, to develop as a great military asset the large body of young men in the colleges; and second, to prevent unnecessary and wasteful depletion of the colleges through indiscriminate volunteering, by offering to the students a definite and immediate military status.

Later announcement will be made of the details of the new system. In the meantime, presidents of collegiate institutions are requested to call this matter to the attention of all their students. Those who do not graduate this Spring should be urged to continue their education and take advantage of this opportunity to serve the Nation.

I trust that the policy above stated will have your support and coöperation.

(Signed) NEWTON D. BAKER,
Dated May 8, 1918 *Secretary of War.*

POSTPONEMENT OF EXAMINATION FOR FAIRCHILD SCHOLARSHIP SCHEDULED FOR JUNE 25, 1918.

In order to establish a plan of award for the Fairchild Scholarship in line with recommendations which should receive further consideration by the Committee, I hereby give notice of postponement of such examination scheduled for June 25, 1918. Decision will be withheld until the A. Ph. A. Convention, at which time a meeting of said Committee will be held. At latest, announcement will be made September 1, and Scholarship awarded by October 1, 1918.

Other members of the Committee are:
R. A. LYMAN, Lincoln, Neb.
J. W. STURMER, Philadelphia, Pa.
GEO. C. DIEKMAN, New York.

H. C. CHRISTENSEN, *Chairman,*
Committee on Examination for Fairchild Scholarship,
4149 Vincennes St., Chicago, Ill.

(See also page 577.)

COMMITTEE REPORTS

REPORT OF COMMITTEE ON PATENTS AND TRADE MARKS.*

In accordance with the request of the Association, your committee has revised the United States copyright, patent and trade mark laws in so far as they specially apply to pharmacy and pharmaceutical chemistry, and herewith presents the proposed revision for your consideration and discussion.

The reason why you have asked your committee to make this proposed revision is for the purpose of eliminating certain objectionable features pertaining to these laws, relating either to the laws themselves or to their interpretation and application by the courts. The objectionable features referred to are as follows:

1. The copyright and patent laws, as they now exist or are interpreted or applied, fail in securing their object as defined in the Constitution of the United States, Article I, Section 8, Clause 8, which clearly states that the object of the copyright and patent laws is to promote progress in science and useful arts by granting to authors and inventors for limited times exclusive right to their respective writings and discoveries. It is contended that these laws, as they now exist, or are interpreted or applied, are a hindrance to progress in the arts of pharmacy and pharmaceutical chemistry for reasons hereinafter to be stated.

2. The trade mark law is not founded upon the clause of the Constitution serving as the foundation for the copyright and patent laws. As stated by the Report of the Commissioners Appointed to Revise the Statutes Relating to Patents, Trade and Other Marks, and Trade and Commercial Names under Act of Congress approved June 4, 1898, and published as Senate Document No. 20, 56th Congress, second session, printed by the Government printing office, Washington 1900, page 97, "It was supposed that the power of Congress to provide for the registration and protection of trademarks was derived from the clause of Section 8 of Article I of the Constitution, which provides for the promotion of 'the progress of Science and Useful Arts by securing for limited Times to Authors and Inventors the exclusive Right to their Respective Writings and Discoveries.' Nowhere in the discussion is found any reference to the clause of Section 8, which gives Congress the power 'to regulate Commerce with foreign Nations and among the several States and with the Indian Tribes.' So far as appears from the discussion of the bill, trademarks were regarded as analogous to patents and copyrights and their relation and importance to commerce appear to have been little understood."

Referring to the discussion of the Supreme Court in the trade mark cases, the same authority, page 100, says: "Criminal prosecutions being had under the statutes of 1870 and 1876 in the southern district of New York and the southern district of Ohio, and a difference of opinion having been certified to the Supreme Court on the question whether these acts of Congress on the subject of trade marks were founded on any rightful authority in the Constitution of the United States, the cases came before the court for review at the October term of 1879. (Trademark Cases, 100 U. S., 82.) The court showed with admirable clearness that because of the distinction between patents and copyrights and trademarks, pointed out in the decision, the power of Congress to enact the law could not be derived from that paragraph of Article I, Section 8, of the Constitution which relates to authors and inventors, since the right of ownership in trademarks is created by adoption and not by authorship or invention."

"A trademark," according to the same authority, "may consist of a name, symbol, figure, letter, form or device." "It is generally considered that a mark to be effective for its purpose should be as simple and striking as possible, should either consist of or have as a prominent feature some representation or word which will be readily caught by the eye of the purchaser and retained in his memory, so that when he comes to make a second purchase he will look for and readily recognize that particular mark. Such trade mark is, for instance, the representation of a star, an anchor, crescent, crown, cross, diamond, seal, triangle, or the word 'star,' 'arrow,' etc."

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* Presented during the first session of the Section on Education and Legislation, Indianapolis meeting, August 29, 1917, by Chairman F. E. Stewart. After discussion, the report was referred to the General Session of the Association.

"The representation of a star or the word 'star' has been registered in the United States Patent Office as a trademark for nearly every recognized class of goods, having been registered nearly 400 times, indicating that, leaving out of consideration registrations to the same owner, made necessary by a change in the law, several hundred manufacturers and dealers have adopted and used that mark on some class of goods. In about 150 instances, the representation of an anchor or the word "anchor" has been registered.

"It will of course be understood that a star or an anchor or any other mark may be used by manufacturers of or dealers in different classes of goods without conflict. For instance, the use of a star as a mark for tobacco does not conflict with the use of a star as a mark for matches or dress braid. It is only when two persons put upon the market goods of the same class bearing the same mark that confusion in the mind of the public is liable to be caused or purchasers are deceived."

It is perfectly apparent from these quotations that in dealing with the subject of trade marks we have under consideration something entirely different than that of copyright and patent. It is objected that the trade mark is being deliberately diverted from its lawful purpose and that the trade mark law is being stretched to cover the same ground as the patent law with the idea of substituting the trade mark system of registration for the patent system, for the purpose of obtaining privileges not to be secured under the patent law and protecting and fostering unfair competition. It is therefore urged that the trade mark law shall be so revised as to prevent this abuse.

3. Another objectionable feature which pertains more particularly to the patent law is, that foreign countries are permitted to patent their inventions in the United States without being obliged to manufacture them in this country. Consequently, the United States patent laws are being used by foreign nations to build up commerce in their own countries to the injury of the United States. This objection might be obviated under treaties whereby foreign nations would grant to the United States the privilege of permitting American inventors to patent their inventions in foreign countries and manufacture them in this country—in other words, foreign nations should grant us the same privileges we grant them.

4. Quoting again from Senate Document No. 20, "Under the United States patent law no class of inventions is excluded from protection. The same is true of Great Britain and the British colonies generally. But many foreign countries exclude from protection one or more classes of inventions. The class of inventions which more than any other is excluded from patent protection is that relating to medicines. It is excluded in Germany, France, Austria-Hungary, Italy, Japan, Denmark, Norway, Sweden, Portugal, Russia and a number of other countries. Other classes of inventions excluded from protection in many countries are foods, chemical products and inventions relating to war material."

"Exclusion from protection of inventions relating to medicines or foods does not generally extend to those relating to processes or apparatus for their manufacture. In all foreign countries which exclude chemical products from protection, except Switzerland, inventions relating to chemical processes may be patented and in nearly all such countries it is expressly provided by law that a patent for a chemical process by which a new chemical product is made shall in fact cover such product unless it is shown that such product was in fact made by some other process.

"It has been urged before us, both at the hearings above referred to and in written communications laid before us that the United States law should be amended to exclude from patent protection both medicines and chemical products generally, at least so far as such inventions are the inventions of subjects or citizens of the foreign countries which exclude these classes of inventions from patent protection, and it has been contended that subjects or citizens of foreign countries should not be permitted to receive in this country patents for inventions which are not patentable in their countries."

5. It is claimed by the objectors that it is to the benefit of the entire community that the practice of pharmaceutical and pharmaco-chemical arts should be conducted in harmony with the scientific and professional requirements pertaining to the educational system of the country, so that coöperation may be secured between educational and commercial interests in promoting progress in science and in the useful arts; and that no system which permits individuals, firms or corporations, to exercise ownership or control over the names or articles of commerce can receive the sanction of the educational institutions of the country. The exercise of such ownership is a

menace to the entire educational system of the country which is apparent when the following facts are considered:

Every article of commerce must have a name of its own whereby it may be manufactured and dealt in, and that if such name is subjected to individual ownership then the educational machinery of the country becomes a great advertising bureau for the exploitation of commercially controlled products. Furthermore, as the information concerning these products appearing in advertisements is necessarily biased, the educational machinery of the country also becomes the means of teaching error, and, in the case of medicines, exploiting the sick room for gain.

6. It is further objected that the conditions now existing not only prevent coöperation between the educational and industrial institutions of the country, but also inculcate ill feeling, hypocrisy and deceit in the relations existing between the professional men and the manufacturers and merchants; between the scientists on the one hand and those who are utilizing the discoveries made by scientists for promoting the industries of the country. This is well illustrated by a statement made by Dr. W. W. Keen of Philadelphia, in a letter on the subject of so-called "ambrine," published in the *Philadelphia Ledger*, February 25, 1917.

Dr. Keen says, in the letter referred to: "In spite of a high opinion of this new and evidently successful treatment, I have a very serious criticism to make. Medicine is a profession not a trade. New methods of treatment, new drugs, new instruments, devised, discovered or invented by instrument makers or any other persons other than doctors, may be freely patented in order to reimburse and reward the inventor. But such methods, instruments, drugs, etc., devised, discovered or invented by doctors, our profession holds should be freely given to the world. A patient burned in Tokyo, Cape Town, Buenos Ayres, or Philadelphia should have all the advantages of such a beneficent discovery instantly and not have to send to Paris for it or go without. Such professional knowledge we hold should be at the service of humanity everywhere. The doctor gains his pecuniary reward from a larger reputation and a wider clientele. Besides this, his personal joy in so benefiting humanity is an incalculable reward."

It is claimed by the objectors that the position taken by Dr. Keen in this matter is the position taken by the medical profession throughout the world, and yet the medical journals are obtaining an enormous income from advertising these same commercially controlled products and if they are successful are obtaining an income and reputation by so doing, and therefore the position of the medical profession on the subject is very inconsistent to say the least.

It is not the province of your committee to condemn the medical profession for their ethics because the position of the profession on the subject is undoubtedly sound. Neither is it our province to condemn the profession for the ethical lapse referred to. However, as pharmacy is a part of medicine, and physicians and pharmacists are necessarily mutually dependent in relation to the preparation of medicines and their proper use in the treatment of the sick, pharmacists have a right to expect that the medical profession will not disregard its fraternal relations.

It is not our province to condemn the manufacturers of medicinal products who avail themselves of the privileges of our patent law or take advantage of the misunderstanding relating to the trade mark law, but it is the province of your committee to point out these conditions so that you may, as an Association, be placed in position to consider intelligently the proposed revision of the copyright, patent and trade mark laws we are placing before you for discussion.

Your committee has published in the JOURNAL of the Association, the proposed revision of these laws, and preambles and resolutions containing evidence in support of our suggestions in relation to the proposed revision. We are now placing in your hands reprints of the same that you may have the matter before you in the proper shape for consideration.

Your committee in making its suggestions as to the revision of the copyright, patent and trade mark laws has added to the laws as they now read, certain sentences, paragraphs and sections intended to overcome the objections above enumerated.

1. We have added to all three of these laws a paragraph in conformity with circular No. 19, issued by the Librarian of Congress stating that no copyright shall subsist in coined names, names of articles of manufacture, names of games or puzzles, names of substances, names or products or names of medicines.

2. We have made it necessary for the applicant desiring a patent relating to a chemical substance, medicine or food, to provide such product with a distinct name which will afterwards be

used by him, his executors, administrators and assigns as the principal title thereof on all labels, in all advertisements and in all literature relating to the product. We have also added a similar requirement to the trade mark law to prevent the registration of a trade mark for new articles of manufacture, chemical substances, medicines or foods, unless a distinctive name shall accompany the application in each instance, for use of those who would compete in manufacturing and vending the same article and also for the use of the public in purchasing same.

3. We have provided that the manufacturer of a patented product shall continue to produce the product by the patented process during the life of the patent and by no other process unless he shall apply for patent for same, and in case patent is granted for a new process he shall announce the fact in at least three prominent medical and pharmaceutical journals, respectively, calling attention to the new process and giving the number and date of patent thereof. The reason for this is obvious and will be apparent to anyone who has had any dealings with the methods sometimes employed by manufacturers of patented products.

4. We have proposed a section as an addition to the patent law containing a similar proviso to that contained in the copyright law relating to alien inventors, which we believe will exclude from patent protection inventions of subjects or citizens of foreign countries which do not grant similar patent privileges to the citizens of the United States. We have been informed that the section taken from the copyright law, which we have modified for the purpose, was written by the late president, Taft, whose knowledge of international law gives him a position of acknowledged authority.

5. We have suggested appropriate sections to cover the objection relating to the limitation of patent privileges, using for that purpose sections from the German patent law. The special paragraphs to which we wish to call your attention read as follows: * * * * *

"No patent shall subsist for, inventions relating to articles of food, or medicines, as also substances prepared by chemical processes in so far as the inventions do not relate to a definite process or apparatus."

"If the invention relates to a process for the production of a new substance, all substances of the same chemical composition are considered as having been made by the patented process until proof to the contrary is given to the Commissioner of Patents."

6. As stated in our brief, your committee favors an amendment to the patent law requiring the Commissioner of Patents to submit all applications for patents relating to medicine and dietetics to the Committee of Revision of the United States Pharmacopoeia for approval before granting the same.

Professor Remington objects to this suggestion thinking it will throw too much work on the Committee for revising the Pharmacopoeia. However, your committee does not insist on this but believes that applications for patents relating to medicines and chemical substances should be referred to some kind of a committee or commission representing the medical, pharmaceutical and chemical professions, before such patents are granted. When you consider that a patent was recently granted for flavoring solution of epsom salts with peppermint and other essential oils, it is very apparent that there is, at present at least, no one connected with the United States Patent Office sufficiently qualified to decide what is meant by a "*new and useful* invention" in the meaning of the patent law, in so far as medicine, pharmacy and chemistry are concerned.

DISCUSSION.[1]

J. M. FRANCIS: What bearing has the proposed resolution upon the matter of process patents? What policy does the committee advocate?

F. E. STEWART: The solution of the problem in regard to product patents is contained in a provision of the German patent law which you will find in the proposed revision of the United States patent law suggested by your Committee and published as part of your committee's report in the JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION, April 1917, under the head "Preambles and Resolutions Relating to Revision of the U. S. Copyright and Patent Laws." I hold a reprint of this portion of the report in my hand.

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[1] Discussions are reported in full instead of in abstract, as both sides of the question are thereby more clearly brought to the attention of the readers and for their consideration.

The provision to which I refer is as follows: "No patent shall subsist for * * * * * inventions relating to articles of food or medicines as also substances prepared by chemical processes in so far as the inventions do not relate to a definite process or apparatus for the preparation thereof." "If the invention relates to a process for the production of a new substance, all substances of the same chemical composition are considered as having been made by the patented process until proof to the contrary is given." The object of this proviso is to promote research for the purpose of stimulating inventors to investigate patented processes for the purpose of improving them during the life of the original inventors' patent, so that when an improved process is discovered whereby the same product may be produced at less cost or of better quality, the public may have the benefit of it without awaiting the expiration of the original patent, which, according to our patent law, continues for seventeen years. The proviso is also intended to protect the original inventor from unfair competition. No person can enter the field without proving that his alleged improvement of the inventor's patented process is sufficiently valuable to warrant the Government granting him the right to compete with the original inventor. The burden of proof is upon him.

It is urged by those who oppose any change in our patent law in relation to product patents, that such a proviso as that contained in the German patent law is not workable in the United States because of a difference in our method of jurisprudence. Under our system of jurisprudence a person must be considered innocent until he is proved guilty, therefore, say the objectors, unless the product itself is so covered by patent that no person is permitted to enter the field in competition, no matter how great his improvement of the original process, an injustice would be done to the original patentee for the reason that the burden of proof would be thrown upon the defendant. There would be no way for the Government officials to find out whether the person claiming to have made an improvement had made such in fact, because his laboratories would not be open to the inspection of Government officials. He would therefore be in position to appropriate the original patented process and employ it in producing the same products, as there would be no way of proving infringement because the inventor of the alleged improvement could claim that his process was his trade secret and that no one had any right to enter his laboratory and prove to the contrary.

I took this matter up with one of the commissioners of the Patent Office and he laughed at the objection as absurd. He agreed with the suggestion made to the chairman of your committee, by the head of one of the large German chemical houses. This gentleman suggested that the United States patent law should be so revised as to make it incumbent upon the alleged inventor of an alleged new process to apply for a patent upon same before being allowed to use it commercially. This would place the Commissioner of Patents in position to pronounce upon the validity of the claim made by the alleged inventor of a new process for producing a patented product.

It has also been suggested that our patent law should be not only changed in such a manner as to conform with the proviso of the German patent law, but also that a provision should be added requiring that the inventor of an improved process for manufacturing a product already patented, should be forced to pay a royalty to the original inventor during the life of the original patent. It was pointed out that the original inventor blazed the way for others to follow and that it is no more than fair to reward him for his pioneer work in this manner.

Your committee in a footnote which you will find at the bottom of page 405, JOUR. A. PH. A., April 1917, stated: "The Committee believes that all ambiguity now existing in the law should be removed in the revision. Provision should also be made in the law so that the inventor of a new process can secure a royalty from the original patentee."

One of the reasons why your committee suggested that the proviso of the German patent law referred to should be introduced into the patent law of the United States is as follows: The object of the patent law is to promote progress in science and useful arts—in this instance in the science of medicine and in the useful arts of pharmaceutical chemistry and therapeutics. This it seeks to do by granting to inventors, for limited times, the right to prevent others copying their inventions, in exchange for the publication of full knowledge thereof whereby others may use the inventions freely for commercial purposes when the patents expire.

Coöperation between the educational and commercial institutions of the country is essential to promoting progress in science and the arts. Coöperation can never be secured between the

educational institutions teaching medicine and the commercial interests supplying materia medica products under a system of monopoly of the kind protected in this country by the patent law. The German government realized the necessity of leaving materia medica and food products open to competition so as to secure the necessary coöperation between the medical profession and its institutions of learning and the producers of materia medica products. It therefore limited the patents to processes only, leaving the products themselves open to competition in the manner already described.

The German patent law separates inventions relating to medicines and foods from other inventions because of humanitarian reasons which we in this country do not seem to recognize properly in this connection. It is because we do not recognize this humanitarian ideal of professional practice that we pharmacists and chemists are criticized by the medical profession, philanthropists and political economists. We are accused of exploiting the sick room for gain and spending our time in the endeavor to see how much money we can make out of a sick man.

In the American Therapeutic Society we have a by-law that no paper may be read or discussed concerning a commercially controlled materia medica product except to condemn it. This by-law was passed to protect the Society and thus protect the public from commercial exploitation by the representatives of commercial interests, who may come to its meetings for the purpose of reading papers advocating the use of monopolized materia medica products. If we expect to obtain the coöperation of educational interests of the country in promoting progress in the science of materia medica and in the useful arts of producing materia medica products and applying them to the treatment of the sick, it is absolutely necessary that we give proper attention to necessary professional and scientific requirements.

J. M. FRANCIS: There is no doubt that this committee has devoted a great deal of attention to this subject, and I want as an individual to do them all honor in saying, I think they are absolutely conscientious in these recommendations. However, this is a country in which everyone is allowed to indulge in his own opinions, and give his reasons therefor. There are some things in the recommendation of this committee I approve of most heartily. There are some that reflect a great deal of human nature. It is very natural that an American should demand for his own people the same privileges abroad, that the subjects of a foreign country receive from our government institutions. It is very natural to say that if a French patent is issued in the United States that we should force the French patentee to manufacture that product in the United States, because the French government would adopt the same procedure in the case of an American who obtained a patent in France. It is not upon this portion of the recommendation, however, that I wanted to speak to you, but I do want you to consider some phases of this matter very carefully, because I believe that the members of the American Pharmaceutical Association are eminently fair, and I do not think that we want to take any hasty action—we do not want to be stampeded. I should very much regret to see the influence of this great national association thrown to the advocacy of a course of procedure which I think would be very unjust. Now, please remember that the policy adopted by this committee, if allowed to pursue its normal course, looks to the support of this Association, which will finally and in the form of a recommendation to Congress, revise the present patent laws.

There is one feature I want to discuss particularly, and that refers to the granting of PRODUCT PATENTS. I am not going to touch on the copyright phase of the matter, because that is a matter of less importance. According to the Constitution, or the sections that were quoted, the ideas embodied therein were very broad and patriotic, that a man should enjoy the results of his own ingenuity or labor, that he should receive proper returns, and a certain length of time was assigned —I think seventeen years—during which inventors should receive this reward. Perhaps that is too long, and it might be wise to reduce that time, but I certainly protest that it will work a very great hardship if a man is denied the fruits of a product patent. Now, let us look at it in a common sense way. If I, as the result of months or years of study or chemical experimentation, succeed in producing something of a very great value in medicine or the arts—not being granted a *product patent*, I am granted a patent only on a specific *process*. It is a matter of common knowledge that in ninety-nine cases out of a hundred, the process that is worked out in accordance with the knowledge of chemistry existing at that time, will be a very crude and a very expensive one. I defy any man before me to cite a single chemical or pharmaceutical or medicinal substance manufactured by chemical reactions, the process of which was not improved very materially

within one or two or perhaps at the outside three years from the time it was originally patented, and its manufacture commenced. It is the most natural thing in the world that chemical processes should be improved, and that with the bringing to bear the minds of various chemists that improved processes should be worked out—processes differing very materially perhaps from the original process employed. Now, what would be the natural result? The man who spends his money, his brains and time, in working out a problem of this kind will soon be deprived of the result of his labor, because the attention of some other individual has been attracted to the value of this particular substance. The idea may have lain fallow for a hundred years, and the second or third man never thought of it; he never saw any inducement to spend any time or money on it; but when the original inventor has brought it forth and proved its value as a dyestuff or a medicine, then this second pirate—and you cannot call him anything better than a scientific pirate—sees the benefit, sets up in competition by using some other process, and is able to take advantage of this and reap the fruit of the inventor's intelligence and industry. Now, if this committee recommendation is adopted, the original inventor is absolutely helpless. A chemical discovery is not on the same basis as a mechanical invention. If I invent a machine for knitting socks, I have a product that will show its originality; I manufacture them of a certain shape and involving certain mechanical processes and parts. I place my machine on the market. If another man places a knitting machine on the market which embodies the principle involved in my machine it is evident at a glance, and it does not require any proof; it only needs that a skilled man look at it and the infringement is apparent and the inventor has his recourse.

Suppose I should produce "phenacetin" and it had not been discovered before. We now know it is of immense value. I introduce it for the first time, but I have nothing except a process patent. I begin to manufacture it; Smith knowing its value, erects a plant, throws a sixteen-foot brick wall around it, and begins to manufacture it. How am I going to prove that he is not infringing my process. The Committee says, "Bring Mr. Smith into court and force him to prove that he makes 'phenacetin' by a different process." That is the law, as I understand, in Germany and that is the procedure the committee recommends in the United States.

Gentlemen, the people in the United States do not think like the people in Germany. Their whole code of legal procedure is different; their method of thought is different, and a thing of that sort does not appeal to American people. In this country we look upon a man as being innocent until he is proved guilty. By this process we are going to upset our institutions and adopt the un-American idea of assuming a man is guilty until he proves his innocence. But, wholly aside from that, you are throwing around the original inventor, difficulties that it is almost impossible to overcome in fighting this underhand competition of a second man who wants to infringe his process. It is unethical; it is un-American; it is essentially wrong.

There is another phase of this matter—You cannot take capital by the scruff and force it to invest in manufacturing projects. All great achievements along chemical lines are brought about by the expenditure of money. You cannot buy brains without money, and, brains are commanding more money every day. You have to get a man with brains and training and you have to give him the proper apparatus and equipment and environment, and all that calls for the expenditure of money. If you individually have five thousand dollars or fifty million dollars to invest, where are you going to put it? Are you going to place it in backing research of this kind, looking for new technical, chemical or pharmaceutical products, where you have no more protection than is offered by this committee's recommendation, or are you, going to put your money in harvesting machines or soap or sardines or hay and the thousand and one other things that will give you a more assured income? This is not a matter of theory. It is a hard, cold fact. Money is going to the enterprise where it has the best protection and yields the largest income. Such things are not done as a matter of sentiment, I am sorry to say. Money is behind them and money is the driving force all through. It requires money, money, money all the time to carry out work of this kind.

Now, just one more thought. This great war in Europe has taught us one thing, if nothing else, and that is the fact that we are absolutely, hopelessly, shamelessly dependent on Europe for pharmaceutical, medicinal and chemical products of all kinds. Where do you get all those things —even common chemicals? From Europe. You cannot today place in the United States an order for immediate delivery for as much as two tons of ordinary precipitated sulphur. Isn't it ridiculous? I know of but one firm in the United States who are making precipitated sulphur.

Cinnamic acid used to sell for two dollars per pound, imported from abroad, and yesterday I saw a quotation demanding a contract for a 1000 pounds at $25.75 a pound, and there is only one firm today making cinnamic acid; up to two years ago there was not a pound manufactured in the United States. You could not buy a pound of diethyl aniline in the United States two months ago, and there is only one firm today making it.

We must pay a protective price to a reasonable extent to build up our chemical industries. The United States has made itself the wonder of the world because its metal industries have received proper protection in the form of a protective tariff. Back in the eighties a few manufacturers in the United States began the fairly successful production of aniline dyes. They had the proper protection at that time, and many thousand dollars were spent in promoting this industry. A change in administration and the selfishness of the men who used the dyes wiped out this protection and the color industry in the United States practically died. Now we wish we had it, and have not. We might have had a color industry today that would have made us independent of the world if this protection had not been removed. You remember a few years ago when the farmers demanded the protection of beet sugar. They claimed that it would employ labor and result in cheaper sugar. They claimed it would be to the interest of the whole United States to do so. A lot of us did not think so, and it looked as if the beet sugar industry was about to be wiped out not so long ago. Now, what is the result? The protected beet sugar industry stands to save the United States millions of dollars. I mention this to show that by paying a little more for a few years, it comes back like bread upon the waters, back to the American consumers to the extent of millions of dollars. The same thing applies to the protection of chemical and pharmaceutical substances based on chemical processes.

I think I have said enough to show that this proposal calls for most careful consideration. There are two sides to it and I do not believe it would be a wise move for this association to advocate the abrogation of product patents.

ALEX. M. ROVIN: This subject, I understand, invokes two schools of thought—the materialistic and the ideal school. It is true, in the light of history, we know that the incentive which modern materialistic thought has recognized is money, money, money; but on the other hand in the light of history, impartially speaking, we do know that in the development of every field of science, if has not been from an incentive of money. Anyone that knows anything about general history as applied to the sciences and arts, knows that whenever there has been a science developed in its slow but sure process, it has been principally through the natural desire of man to contribute something to general society. In this day we live in an age of extreme materialism and the law of competition is very intensive and very acute, and this particular tendency has compelled society, especially of the United States, to make an effort to protect the ingenuity of man. That is all true. To our material advantage, the financial advantage, the recommendations of Doctor Stewart are contrary, but in the light of real human instinct we must not forget that every stage of society is displaced by a new stage, and let us look forward to this fact, that commercialism as we understand it today, as we practice it today, is merely a passing stage of the game in human society, and the idealistic school will eventually predominate. The incentive to the progress of science is not money only. This is the answer I would like to make to the statement of Doctor Francis. I am convinced that protective laws are essential, but there are better ways and methods to employ in order to go ahead in the field of scientific endeavor. I endorse the moral and ideal spirit of Doctor Stewart and from a material standpoint I accept the reasoning of Doctor Francis.

FRANK R. ELDRED: Doctor Francis has stated in a very forceful way his individual views of the subject. I want to add a few words which represent my personal views, and at the same time point out the attitude of the American Chemical Society which I represent as delegate to this Association.

In order to show you the different conclusions in regard to two points covered by the report of this committee, that is to say, the subject of product patents and of a compulsory working clause, I want to tell you about the work of the committee on patents of the American Chemical Society. This committee, consisting of Dr. Leo. H. Baekeland, Dr. B. C. Hesse and Dr. William Grosvenor, has gone into the matter very thoroughly. They have not only brought in recommendations and made statements concerning these points, but Doctor Hesse has backed them up with a very extensive compilation of statistics.

We must consider two stages of the problem, the theoretical and the practical. Theory,

as we all know, is a very good thing, as a starting point, but you are aware that if a number of chemists get together to discuss any point of chemical theory, some very striking differences of opinion will immediately arise, and then they must secure experimental evidence to prove their theories. After all, the theory is only good in so far as it enables you to test it and thus establish the facts. Now, that is exactly what has been done, in the compilation of these statistics to which you can all refer in the *Journal of Industrial and Engineering Chemistry* for April and November 1915. You will find I think thirty or forty pages of statistics and discussion. If you will take the time to go over that mass of statistics carefully I think you will have a very clear view of this whole question. Compulsory working, in theory, is a beautiful idea, but these statistics will prove to you that where this theory has been put into practice, it has been a failure. If I had time, I might offer an explanation of the failure of such legislation, but it has been proved that compulsory working has wrought injury to the industries of the countries where it has been tried, rather than good as you might theoretically expect it to do. That was a case of testing a theory and proving it to be fallacious.

Now in regard to the product patent for chemicals, the argument is often advanced, and it is perhaps the chief argument, that the great chemical industry of Germany was built up under the protection of process patents only and therefore that system would be a good one for us to adopt. However, if you will look into the German process patent and the manner of granting patents on chemical processes in Germany, you will find that the product itself is more completely protected in Germany than it is by our American product patent. That may have something to do with the fact that the chemical industry was built up to such a wonderful extent along certain lines in Germany—the fact that they had even greater patent protection than we had in this country.

Another argument which is advanced is that the product patent works a hardship on the American manufacturer. This is really a ridiculous statement. As Doctor Francis pointed out, the only way in which the American manufacturer is willing or able to develop the chemical manufacturing industry in this country is under complete patent protection. The fact is largely overlooked that when you try to cover drugs and medicinal chemicals, you cannot stop at medicinal chemicals, and some of the people who favor the abolition of the product patent fail to point out that when you hit the medicinal chemicals, you also hit a very large number of technical chemicals. In fact, it would affect all organic chemicals, and their manufacture would never be developed to any great extent without proper patent protection.

The justice of granting to the inventor of a chemical product the same protection you would grant to the inventor of a mechanical or electrical contrivance is so apparent it hardly needs to be mentioned. The American Chemical Society, with ten thousand members, including both university and industrial men, has favored and is advocating very strongly the continuance of the product patent, and also opposes compulsory working. This will show you what the chemists of the country who have made a very thorough study of chemical patents think of the subjects under discussion.

I do not understand Doctor Stewart's idea in regard to the coöperation between the practical and the educational pharmaceutical men. In the American Chemical Society the coöperation between the educational men and industrial men is very close and the educational men are just as much united in favoring thorough patent protection as the industrial men. It seems to me that this Association should be very careful, to take no action in opposition to the position of another association which has studied the subject of chemical patents as carefully as the American Chemical Society has done.

As you know, the manufacture of dyes is now being taken up extensively in this country and the manufacturers are very much opposed to such changes in our patent laws. They feel that it will jeopardize the dye industry in this country if they do not receive the protection of product patents. In discussing this matter we also frequently overlook the fact that previous to the European war the value of the products of a chemical nature which we exported to Germany was greater than the value of the chemical products which we imported from Germany. Moreover the value of the German patents held by citizens of this country is greater than the value of the United States patents held by citizens of Germany and therefore in discussing chemical patents we must take into consideration the effect of any proposed legislation upon the patent system as a whole.

EDITORIAL NOTES

Editor: E. G. EBERLE, Bourse Building, Philadelphia, Pa.
Committee on Publication: J. W. ENGLAND, *Chairman;* G. M. BERINGER, CASWELL A. MAYO, H. B. MASON, E. L. NEWCOMB, and the Editor-in-Chief of the JOURNAL, General Secretary, Treasurer and Reporter on the Progress of Pharmacy, *ex-officio.*
Editorial Office: 253 Bourse Building, Philadelphia, Pa.

THE COLLEGES OF PHARMACY AND THEIR STUDENTS.

Commencement exercises of the colleges of pharmacy have been held and it is safe to say that the graduating classes of most schools have been smaller than heretofore. The reason for this is known and therefore every effort should be made by the schools to stimulate attendance in every permissable way. We have heretofore stated that in times like the present suggestions are acceptable that would not be advised under normal conditions.

It seems to us that the years of preliminary drug store experience as entrance requirement to schools of pharmacy might be cut down so as to assure graduation before the candidates have arrived at their majority. Boards of Pharmacy could examine candidates even though they are less than 21 years of age and deficient in years of drug store experience. Report on their examination could be withheld or a temporary certificate given them. With some schools and in some States this might not be possible, but it is a matter that should be carefully considered under present conditions, always bearing in mind that there will be an end to this war. The schools must have students, not only for revenue but so the public may be efficiently served; the proposition therefore involves both an economic question and a duty.

For the reason that pharmacists are not exempted by virtue of their profession, though district boards, when they deem necessary, may place them in deferred classes, every pharmacist within the age limits may be drafted and thus leave some communities without any pharmacists; in fact, there are such instances now. (See letter of Ex-President Frederick J. Wulling in Correspondence Columns.)

It is unnecessary to suggest that every related act of pharmacy schools should be based on assisting the Government in its mobilization; this they have done from the very beginning of the war, are doing now and will continue to do, but there is a necessity for conserving pharmacists and students for pharmacy schools. Women should be encouraged to take up the study of pharmacy but, unless they have already engaged in the work, relief from this source could not possibly come for a number of years.

An editorial "Colleges and the Country," in the *Philadelphia Public Ledger* of May 21, 1918, refers to the burdens of educational institutions and the importance of coördination of the colleges with Government departments as a war necessity. Part of the editorial follows:

"The proportion indeed of men who have gone into service, from the undergraduate and the graduate groups, the men out of college, is so high as to menace even the wartime stability of the colleges. Nevertheless, the colleges are still planning new sacrifices for their undergraduates during the summer. Thousands are enrolling in the United States employment service, anxious to make use of all their spare time for the country and not waste their own energy by a summer of idleness. All this is what might be called the roseate side of the picture, since it reveals all as actuated by the highest patriotic principles. At the same time, as the various college officials know, and as has been made clear at the recent conferences of college presidents and other administrative officials, and as the preparatory school heads know very well also, what the colleges have done has been magnificently one-sided, they bearing all the burdens of the war, while the Government, though it incites this sacrifice in all its services, primary and secondary, has by no means coöperated with the colleges to save certain features of the situation. Of course, this lack of coöperation comes from the fact that we have no Department of Education that can work out a broad line of policy which would coördinate the colleges with all the Government departments and save the unnecessary waste of the younger men who will be needed later in the

immediate future in professional, engineering and other specialized services to the community.

"Where we ought to be strong through a central organization, we are therefore weak; and it looks as if the weakness would continue through the war, since neither Congress nor the various executives in Washington are inclined to relieve the very grave situation. What the colleges need and what they should demand is a coördinated support and not the mere lip-service of rhetorical approval for the magnificent sacrifices they are making.

NATION-WIDE ECONOMY.

To carry out the program of national economy demanded of the American people by the war they must adopt scientific and systematic methods of economy. Spasmodic and periodic saving will not fulfill the demand upon us.

One method that has been proposed and has the approval of the Treasury Department is for every American to pledge himself or herself to economize and save, and with the savings at definite periods purchase specific amounts of war-saving stamps.

We must give our Nation, we must give our men in arms, all the strength and support possible. To do this we must cut our own demands on the labor, material, and money of the country to the limit, and increase to the limit the supply of money, material, and labor available to the Govermnent. All of our energies and resources should be devoted to the winning of the war, and to accomplish this we must economize, save, and lend to the Government.

A definite systematic plan of saving, strengthened by resolve and a pledge to save and lend to the Government, will be productive of the best results. The savings plan campaign is now on. Every patriotic American should make a pledge to save and keep the pledge.

NEW NEW YORK HEALTH LAWS.

A bureau of venereal diseases has been established by law in the New York Department of Health. The bureau may manufacture and dispense remedies for the treatment of venereal diseases. Other duties are the examination of specimens and distribution of literature for the education of the public.

A disease inspection bill has also become a law which provides for the examination of persons suspected of having infectious diseases. Persons affected must submit to a required course of treatment.

THE QUININE SITUATION.

Under date of May 13, Consul-General Fuller, at Padang, Sumatra, advised the Government that licenses to export to the United States would be freely granted for all commodities on the embargo list, which includes quinine and cinchona bark.

Dr. H. H. Rusby, in a letter to the *Paint, Oil and Drug Reporter*, reviews the cinchona situation of South America. His interesting communication concludes with the following paragraphs:

"There is, however, a far more favorable aspect to the status of the Colombian barks. While the conditions for their export are peculiarly unfavorable, those for their manufacture at certain points of their production are equally favorable. This is not an undertaking that can be expected to take care of itself, and that can be gone into on the mere strength of enthusiasm or even energy. There are many and deep pitfalls which can cause disaster. All the difficulties of manufacture under ordinary conditions are multiplied and there are new ones in addition. Nevertheless, after a close study of every condition and means of meeting it, I have no hesitation in saying that the production of quinine in Colombia constitutes the easiest method of meeting the situation confronting the United States as a result of the curtailing of our East Indian supplies. The material is sufficiently abundant to supply thousands of tons of bark annually; its manufacture there is feasible and the business can be made highly profitable by correct procedure.

"In 1885 the same situation was presented by the coca leaf and cocaine production, and I then advised the manufacture of the alkaloid at the plantations. This industry was later established and has reached great proportions and yielded rich returns. I now see the same opportunity in the case of quinine quite as clearly as I then saw it in the case of cocaine. The principals under whose direction I made my Colombian studies have now, under my advice, organized a company which plans to develop other profitable lines, but which will, I am sure, produce an abundance of quinine with great advantage to this country."

FOR ARMY WAR SERVICE BUREAU.

A bill to establish a congressional Army war service bureau to relieve members of Congress form the burdens of correspondence on military matters was introduced by Representa-

tive Sanford, of New York. Under the terms of the bill both the bureau and the War Department would be forbidden to consider a congressional recommendation for a commission or appointment, except as such recommendation bore on the character or residence of the applicant.

THE EDMONDS BILL.

R. P. Fischelis, in the *Druggists' Circular*, says, "that it is well to remember that the Congressman who favors the Edmonds Bill does so because it provides for adequate pharmaceutical service for his son and his constituent's son who are in the army."

We cannot expect a favorable report from the Committee on Military Affairs unless they are convinced that the measure provides a needful service. We are convinced that it does or this would be our last word on the subject; this conviction, however, induces us to impress upon every pharmacist to take a personal interest in its furtherance. The main thing is to have your patrons understand the purpose of the bill so thoroughly that they will at once express their views to their congressmen. It is a matter of such importance that any selfish motives would do injury to argument, plain and clear presentation of facts is all that is desired, but naturally a thorough interest in its importance must be shown. Do your part in the propaganda.

AMERICAN CASTOR BEAN CROP PROSPECTS.

Several hundred thousand acres of land have been planted with castor beans, chiefly in the South, and the crop is said to be doing nicely in most sections.

Dr. W. W. Stockberger (chairman Scientific Section, A. Ph. A.), in charge of the office of drug-plant and poison-plant investigations for the Bureau of Plant Industry, U. S. Department of Agriculture, and who is in special charge of the growing of castor beans for the Government, is on a tour of the Southern States. The plans of Dr. Stockberger when he left Washington called for a tour of six states with conferences in the principal sections of each where castor bean contracts have been let.

DR. WILLIAM MANSFIELD TO BECOME DEAN OF ALBANY COLLEGE OF PHARMACY.

William Mansfield, A.M., Phar.D., professor of histology and pharmacognosy at the College of Pharmacy, City of New York, Columbia University, will leave the college to accept the position of dean of Albany College of Pharmacy. He will enter upon his new duties July 1. It is understood that arrangements have been entered into by the Albany college and Union College by which a complete reorganization of the college and of the teaching staff will be effected, thus affording Dr. Mansfield increased opportunities. While a distinct loss to New York college, his associates and his many friends in drug circles in this city and state are congratulating him upon this new recognition of his ability in his chosen profession.—*Paint, Oil and Drug Reporter.*

CANADIAN PHARMACEUTICAL JOURNAL CELEBRATES FIFTIETH ANNIVERSARY.

The Canadian Pharmaceutical Journal has completed fifty years of service and celebrates the event with a Jubilee Number.

G. E. GIBBARD.

There is much interesting historical matter in the issue. In a recent letter, Editor G. E. Gibbard advised that he contemplated attending the Chicago meeting of the American Pharmaceutical Association.

CHEMISTS STAND BY L. P. BROWN.

The New York Section of the American Chemical Society has adopted resolutions favoring the retention of Lucius P. Brown, who has been temporarily suspended as direc-

tor of the bureau of food and drugs, pending trial on charges growing out of Mayor Hylan's proposed reorganization of the Health Department, of which that bureau is one of the most important divisions.

The Council of the New York Academy of Sciences has adopted similar resolutions. Mr. Brown is a member of the American Pharmaceutical Association.

SON OF PROF. JOHN URI LLOYD HAS RETURNED FROM FRANCE.

The son of Prof. John Uri Lloyd, returned from France at the close of his term of enlistment, in August last, being recalled by Cornell University for the purpose of giving a series of lectures for the benefit of the Allies, a work in which he is still engaged.

FORDHAM UNIVERSITY COLLEGE OF PHARMACY ADDS FORTY-TWO MEMBERS TO THE AMERICAN PHARMACEUTICAL ASSOCIATION.

The interest of Dean, Dr. Jacob Diner, and Prof. Gustave Horstman is noted by the number of applications from Fordham University College of Pharmacy. The additions this year number forty-two, all of them bearing the endorsement of the two members mentioned.

PURDUE'S "BIT."

The Purdue University service flag now has 1900 stars, and of these 65 are for members of the School of Pharmacy.

The men from the School of Pharmacy are classified as follows: 11 commissioned officers, 22 non-commissioned officers, one chief pharmacist (Navy), 5 pharmacists (Navy), and 25 privates. Among the commissioned officers there is one major, one captain, and nine lieutenants. They are distributed in the service as follows: 27 in the Medical Corps, 18 Infantry, 8 Navy, 3 Engineers, 3 Gas Defense, 2 Sanitary Detachment, 2 Mechanics, and 2 Aviation.

Mrs. Charles W. Johnson, wife of Prof. Johnson, of the University of Washington, died May 2, after an illness of about three weeks. Mrs. Johnson was a graduate of the University of Michigan. The husband and three children survive. The sympathy of the members of the A. Ph. A. is extended.

Dr. J. H. Dorman is a graduate of Baylor University College of Pharmacy and also of its Medical Department. Soon after the war started he enlisted in the Medical Corps of the British Army, serving first in England and then in France. When the United States

J. H. DORMAN.

entered the war he became attached to the U. S. Expeditionary Forces and he is now Chief Surgeon of a hospital "somewhere" in Italy.

William Jay Schieffelin, Jr., son of Dr. Schieffelin, member of the A. Ph. A., was married May 4 to Miss Annette Markoe, daughter of Dr. and Mrs. W. Markoe, of New York City. The groom is a first lieutenant Twelfth U. S. Field Artillery.

Max Morris, president of the Max Morris Drug Company, died at his home in Macon, Ga., April 22, of pneumonia. He was president of the Georgia Pharmaceutical Association in 1905 and 1906 and secretary from 1906 to 1910; member of the Georgia Board of Pharmacy from 1898 to 1906. Mr. Morris joined the American Pharmaceutical Association in 1898. His parents, wife, two sisters and two brothers survive him.

SOCIETIES AND COLLEGES.

THE CHICAGO MEETING OF THE AMERICAN PHARMACEUTICAL ASSOCIATION.

The program for the Chicago meeting will be found on pp. 466–467 of the May issue of the JOURNAL. Prepare now to participate, your papers should be in the hands of the Chairmen of the Sections thirty days in advance of the meeting and this is to be held during the week of August 12, headquarters at the Congress Hotel.

Contributors to the Sections should, if their papers are lengthy, submit with them an abstract of each, so that in the event time should not permit of the reading of the original, due consideration will be given to the work you have done.

The presiding officers and secretaries of the Sections are:

Scientific: Chairman, W. W. Stockberger, Bureau of Plant Industry, U. S. Department of Agriculture, Washington, D. C.; Secretary, H. C. Fuller, Institute of Industrial Research, 19th and B Streets, N. W., Washington, D. C.

Practical Pharmacy and Dispensing: Chairman, J. C. Peacock, Erie and Broad Streets, Philadelphia, Pa.; Secretary, R. W. Terry, Groveport, Ohio.

Education and Legislation: Chairman, C. B. Jordan, 409 Russell Street, Lafayette, Ind.; Secretary, W. F. Rudd, 1216 Grove Ave., Richmond, Va.

Commerical Interests: Chairman, R. P. Fischelis, 828 N. 5th St., Philadelphia, Pa.; Secretary, F. W. Nitardy, 66 Orange St., Brooklyn, N. Y.

Historical: Chairman, L. E. Sayre, Lawrence, Kans.; Secretary, Hugo Kantrowitz, 104 John Street, New York City.

Womens: President, Miss Zada M. Cooper, University of Iowa, Iowa City, Ia.; Secretary, Mrs. R. H. Kenaston, Bonesteel, So. Dakota.

House of Delegates: Chairman, Samuel C. Henry, 702—168 N. Michigan Ave., Chicago, Ill.; Secretary, Jeannot Hostmann, 115 W. 68th St., New York City.

Those who can do so without inconvenience are requested to send a duplicate copy of their papers with abstracts to the Editor of the JOURNAL A. PH. A., 253 Bourse Building, Philadelphia, Pa.

Chairman Charles E. Matthews, 169 N. Franklin Street, Chicago, Ill., is Chairman of the Committee on Entertainment. He will be glad to make reservation for you. The Local Secretary is E. N. Gathercoal, 701 So. Wood Street, Chicago, Ill. A list of the officers of the American Pharmaceutical Association will be found on page 496, May issue of the JOURNAL. An application blank for membership in the A. Ph. A. is printed in nearly every number of the JOURNAL. Remember the dates of the meeting, during the week of August 12. The meetings of the National Association of Boards of Pharmacy and of the American Conference of Pharmaceutical Faculties will be held on Monday and Tuesday of the same week.

OFFICERS OF THE MANUFACTURING PERFUMERS' ASSOCIATION OF U. S.

President, G. A. Pfeiffer, of New York; *First Vice-President*, W. A. Bradley, New York; *Second Vice-President*, George F. Merrell, Chicago; *Secretary and Treasurer*, Walter Mueller, New York; *Executive Board*, 1921, A. M. Spiehler, Rochester, N. Y.; C. M. Baker, New York; Vincent B. Thomas, New York; 1920, Howard Goodrich, Omaha; D. H. McConnell, New York; 1919, Gilbert Colgate, New York; P. E. Page, Brooklyn.

OFFICERS OF PROPRIETARY ASSOCIATION OF AMERICA.

President, Frank A. Blair, Chicago, Ill.; *First Vice-President*, W. H. Gove, Lynn, Mass.; *Second Vice-President*, Allen Moore, Monticello, Ill.; *Secretary-Treasurer*, Charles P. Tyrrell, Syracuse, N. Y.; *Executive Committee*, three years, V. Mott Pierce, Buffalo, N. Y.; J. A. Gray, New York City; two years, Carl J. Balliet, Buffalo, N. Y.; Stanley P. Jadwin, New York City; one year, A. H. Beardsley, Elkhart, Ind.; J. F. Hindes, Baltimore, Md.; Z. C. Patten, Jr., Chattanooga, Tenn.

REORGANIZED WAR SERVICE COMMITTEE OF AMERICAN DRUG MANUFACTURERS' ASSOCIATION.

The War Service Committee of American Drug Manufacturers' Association is now composed of the following gentlemen: Willard Ohliger, chairman, care Frederick Stearns & Co., Detroit; F. G. Ryan, secretary, care Parke, Davis & Co., Detroit; Donald McKesson, care New York Quinine and Chemical Company, New York City; Frederick Rosen-

garten, care Powers-Weightman-Rosengarten Company, Philadelphia, Pa.; W. A. Sailer, care Sharp & Dohme, Baltimore, Md.; Burton T. Bush, care Antoine Chiris Company, New York City; Dr. H. C. Lovis, care Seabury & Johnson, New York City; Milton Campbell, care H. K. Mulford Company, Philadelphia, Pa.; Dr. W. C. Abbott, care The Abbott Laboratories, Chicago, Ill.

The address of the committee is 1050 Penobscot Building, Detroit, Mich.

STATE PHARMACEUTICAL ASSOCIATION MEETINGS.

The State Pharmaceutical Association meetings for June were listed in the May issue of the JOURNAL with the exception of Maryland. The date of this meeting was named only recently and the association will convene at Buena Vista, Pa., June 25–28; Eugene Hodson, of Baltimore, is the president and E. T. Kelly, also of Baltimore, is secretary.

The July conventions are: California, at San Diego, July 8–10, W. Bruce Philip, Oakland, president, and E. A. Henderson, Los Angeles, secretary; Ohio, on steamer at Toledo, July 21–26, E. H. Thiesing, Cincinnati, president, and Theodore D. Wetterstroem, Cincinnati, secretary; Oregon, at Seaside, July 9–12, Hal. J. McMair, Ashland, president, and A. W. Allen, Portland, secretary; Tennessee, at Jackson, July 9–11, Harry Mayer, Memphis, president, and T. J. Shannon, Sharon, secretary; Virginia, at Natural Bridge, July 9–11, C. H. Goldsborough, Culpeper, president, and E. L. Brandis, Richmond, secretary; Washington, on boat at Seattle, July 9–11, H. G. Duerfeldt, Spokane, president, and J. Elmer Brown, Spokane, secretary.

A CRITICAL PERIOD IN THE HISTORY OF THE MO. PH. A. IS AT HAND.

We are now in the most supreme phase. Organized in 1879 to secure a pharmacy law for Missouri, the Association has continued almost forty years in conceiving and developing still other agencies intended to promote pharmacy as a calling of vital usefulness. In 1915, we thought about the war in Europe. The year following, we commented on the great world conflict and its effect on pharmacy. In 1917, we were bewildered by this remarkable and unexpected event and scarcely realized that the United States was in the war. Today, we know that this, the greatest of all human contests, is our war and we must win it.

Today the most critical period in the history of the Mo. Ph. A. is not of such vital concern to the organization as such. We have been careful and prudent and a few years of quiescence would not kill the vitality of the Association nor blot out its accomplishments. The critical situation concerns us as human beings and as individual pharmacists. No person can escape the effects of the war and we must each and all bear a portion of the burden. So much for us as citizens of Missouri. Now, as individual pharmacists, we have the privilege and the duty of doing more for the cause than can be logically expected from the citizen at large.

Come to the Elms Hotel at Excelsior Springs, June 11–14, and with frankness, honesty and simplicity consult with your fellow members of the Mo. Ph. A. for the good it will do you and the benefit that humanity may derive. This is the hour for resolute action and intensive coöperation.

HENRY M. WHELPLEY,
Secretary.

We are printing this call because there is in it much for every pharmacist to consider. Those who have never taken any great interest in their State Association should do so this year. A wise business man exerts his greatest energy when there are difficulties in the way of his progress. The time to convince a friend of the sincerity of your friendship is when he needs a friend. The message is one for every pharmacist, a call to duty in behalf of your State Association, of the National associations.

We have added 217 new names to the list of the American Pharmaceutical Association membership this year. Will each member endeavor to add *just one more?* We are becoming experts in "going over the top;" let us apply like energy in building up *our* Association.

OFFICERS ARKANSAS ASSOCIATION OF PHARMACISTS, 1918–1919.

President, Jesse D. Hodges, Little Rock.
Vice-President, W. C. Hogan, Atkins.
Second Vice-President, F. W. McClerkin, Little Rock.
Secretary-Treasurer, Miss Mary A. Fein, Little Rock.

OFFICERS LOUISIANA PHARMACEUTICAL ASSOCIATION, 1918–1919.

President, John R. Taylor, New Iberia.
Vice-President, John N. Wallo.
Second Vice-President, W. N. Wilson, Independence.
Recording Secretary, George W. McDuff, New Orleans.
Corresponding Secretary, Miss Aurelia B. Kuhn, New Orleans.

OFFICERS OKLAHOMA PHARMACEUTICAL ASSOCIATION, 1918–1919.

President, Thomas Roche, Oklahoma City.
First Vice-President, Lee Drummond, Dewar.
Second Vice-President, W. J. Roersia, Oklahoma City.
Secretary, F. B. Lillie, Guthrie.

OFFICERS TEXAS PHARMACEUTICAL ASSOCIATION, 1918–1919.

President, Tom Snell, Cooper.
First Vice-President, Sam P. Harbin, Richardson.
Second Vice-President, W. C. Burns, San Antonio.
Third Vice-President, W. H. Wentland, Manor.
Fourth Vice-President, Marvin Anderson, Fort Worth.
Secretary-Treasurer, W. H. Cousins, Dallas.
Home Secretary, J. W. Graham, Austin.
Trustee, R. H. Walker, Gonzales.
Historian, Miss Lum Shipe, San Marcos.

W. B. Morrison, of Waco, and J. W. Graham, of Austin, were elected life members. The 1919 meeting will be held at Galveston.

REXALL CLUBS RESOLVE TO SUPPORT THE EDMONDS BILL.

WHEREAS, It behooves every American druggist who loves his calling to do whatever lies in his power to correct the wrong unintentionally done to pharmacists engaged in the military service of the United States, through failure of the National Government to recognize the knowledge and skill of these pharmacists and their natural and commendable desire to use these for the benefit of their fellow Americans and our Allies; therefore, by the Rexall Clubs of Virginia, Maryland, Delaware, the District of Columbia, West Virginia and North Carolina, in convention assembled, be it

Resolved, That we hereby urge the Executive Committee of the International Association of Rexall Clubs to take such action as will insure that every one of the 7,000 Rexall Druggists who constitute our American membership shall exert himself to the utmost to secure the passage, by Congress, of the Edmonds bill which has this object in view.

Resolved, That the President of the Tri-State Rexall Club, Mr. H. Lionel Meredith, of Hagerstown, Md., be, and is hereby requested, to confer with President Louis K. Liggett, of the United Drug Company, for the purpose of securing his invaluable help towards the enactment of this legislation which we so earnestly desire. Having cheerfully placed their lives at the service of their country, our fellow pharmacists are anxious to make the most of whatever knowledge and skill they possess to further the endeavors of the millions of Americans and their Allies who are engaged in this great struggle, and this commendable desire certainly ought to be recognized by the Government.

THE PHARMACIST AND THE LAW

IMPORTANT FEATURES OF THE NEW JERSEY PHARMACY LAW.

Some of the important features of the new pharmacy law of New Jersey are the following:

A sign, stating the name of the registered pharmacist in charge thereof, must, on and after July 4, 1918, be displayed on or in front of each Pharmacy in this State.

Biennial re-registration is required and the fee thereof is $1.00; a notice will be sent to each registered person before the date on which the next re-registration fee will be due.

Applicants for examination for Registered Pharmacist's registration must, on and after September 1, 1920, have been graduated from an approved College or School of Pharmacy.

The Board of Pharmacy is granted authority to revoke certificates of registration on certain specified conditions, *i. e.*, after each accused person has been served with a copy of the complaint and has been given a hearing before the board and has been found guilty of any of the following charges:

When the registration is shown to have

been obtained by misrepresentation or fraudulent means, or

When the registrant is guilty of chronic or persistent inebriety or addiction to the use of narcotic drugs, or

When the registrant has been twice convicted of violation of Chapter 197, P. L., of 1908, and the amendatory acts thereto, commonly known as the "Anti-narcotic Act," or

When the holder of the certificate has been found guilty of continuous and wilful violations of this or any other statute relating to the practice of pharmacy.

Provision is made for reciprocal registration.

BEVERAGE AND FRUIT SYRUPS NOT SUBJECT TO LICENSE.

Among the food commodities subjected to license by the President's proclamation of October 8, 1917, were "sugar, syrups and molasses."

The syrups intended to be licensed were so-called "table syrups" and not beverage syrups or fruit syrups, or medicinal syrups. It is therefore ruled that beverage syrups or fruit syrups, which include coca-cola and other beverage syrups and soda water syrups, and medicinal syrups, are not licensed commodities and neither manufacturers nor distributers of such syrups are required to obtain a license to make or handle them.

USE OF SACCHARIN ALLOWED IN CARBONATED BEVERAGES IN TEXAS.

According to an announcement made by Texas Food Commissioner saccharin may be used in carbonated beverages in Texas. The statement issued by him reads: "Due to abnormal conditions existing, ruling No. 12 forbidding the use of saccharin in beverages is hereby suspended until further advised. You are respectfully notified that saccharin may be used in carbonated beverages, provided the product is labeled in such a way that will clearly indicate to the consumer that it has been artificially sweetened with saccharin."

NARCOTIC NEWS AND REGULATIONS

Draft examinations are discovering a large number of narcotic addicts, according to Representative Henry T. Rainey, of Illinois, chairman of the Narcotics Committee appointed last March by the Secretary of the Treasury on the recommendation of Daniel C. Roper, commissioner of Internal Revenue.

The alarming prevalence of the use of narcotics has been a revelation to the members of this committee, several of whom thought that they had a pretty fair idea before of the number of users of habit-forming drugs.

To prevent a use by which illicit distributors of habit-forming drugs have been able to buy at auction unclaimed packages of drugs from express companies, the Internal Revenue Bureau has issued a ruling that railway and express company agents hereafter must notify revenue collectors of auction sales of unclaimed articles. Packages containing narcotics will be sold only to physicians or pharmacists registered under the Harrison drug act.

Dr. Charles A. Rosewater, who was engaged by Dr. Oscar Dowling, president of the Louisiana Board of Health, to make an investigation of the use of habit-forming drugs in Louisiana, has sent in his report, declaring there are about 18,000 persons using drugs. He makes these recommendations:

"To provide immediate relief from suffering and financial ruin, the State should immediately acquire a supply of morphine and opium, to be furnished addicts in quantities necessary for their physical support, at cost, under strict regulations, to guard against abuse.

"In carrying out these provisions trusted physicians in each locality must coöperate with the State Board of Health in order that there may be no unnecessary suffering, and that the addicts be encouraged to help themselves, and in order that the curable cases can be weaned from the drug as rapidly as possible."

Dr. Rosewater recommended that the State Board investigate the soft drinks containing caffeine dispensed throughout the State.

The Federal officers in the miscellaneous division of the Internal Revenue Bureau are prepared to contest the decision of the United States Circuit Court in Illinois that Section 2 of the Harrison Narcotic law is unconstitutional, but they do not believe it will be necessary to get a special Supreme Court decision in that particular case against A. L. Blunt.

A. L. Blunt, of Chicago, was convicted on 13 counts for violation of the Harrison act. The section of the law held unconstitutional was Section 2, and the principle involved is the one under which the punitive clause of the law was successfully attacked some months ago, that the provision is foreign to the revenue

portion of the act, and is an interpolation of police power in a purely revenue measure.

District Judge Daniel Fish, in Minneapolis, decided that physicians are prohibited from supplying habitual users and may issue to them only prescriptions for curative purposes.

The trade interests and the Federal authorities believe that illegal traffic in narcotic drugs got a severe setback in this judicial decision.

URGES NEED OF NATIONAL TRADE-MARK.

The need of a national trade-mark was urged May 27, at the spring meeting of the National Retail Dry Good Association at Chicago, a special address on the subject being delivered by Chauncey P. Carter, of the Bureau of Foreign and Domestic Commerce, Department of Commerce, who had an important part in drafting the National Trade-Mark Bill now before Congress.

"One reason why a national trade-mark would be of great benefit to the American manufacturers," explained Mr. Carter, "is because there is so much legalized piracy of private trade-marks in foreign markets. The average manufacturer in this country does not consider export business until he has begun to exhaust the possibilities of the home market. In the meantime it never occurs to him that he ought to protect his trade-mark in foreign countries. See what happens, though: A New York exporter purchases some of his products and sends them to a certain country in South America. The buyer there finds that they will sell well and writes back to the New York exporter for an exclusive agency. Naturally, the exporter is not able to give him an exclusive agency nor is he anxious to put him in direct touch with the manufacturer. What does the South American merchant do then? He finds that the manufacturer's trade-mark is not registered in his country, so he takes out a registration in his own mane. Some years later the manufacturer decides to enter the export field; he inserts advertisements in export journals and soon secures an order from a reputable concern in that same South American country. The order is accepted and the goods shipped, but lo and behold! when they reach their destination they are confiscated and held upon complaint of the other merchant, who cites his trade-mark registration as proof of his ownership of the mark, also adducing evidence to show that he was the first user of the mark in his country. And he has the law on his side.

"If we had a national trade-mark, owned and protected by our Government, this American manufacturer could outwit the pirate merchant by merely substituting the national trade-mark for his private mark on all shipments to that country."

Other reasons were advanced for the adoption of a national trade-mark, and issue was taken with those who would make the use of such a mark compulsory. The mark should be granted, it was urged, only to the manufacturers of goods that reflect credit on the industries of the country.

It was also pointed out that the measure providing for a national trade-mark was only one of a number now being put in shape and considered by the Department of Commerce with a view to preparing the American manufacturer and exporter to hold his own in the struggle for world trade that is expected to follow the making of peace.

PROPOSED BRITISH TRADE-MARK LAW.

There is a bill in the British Parliament which provides that if the owner of a trade-mark so uses it as to lead the public to regard it as the name of an article it shall be removed from the register of trade-marks. It is understood that British manufacturers are taking steps to oppose the bill, but should it be passed American articles which have been popularized through name trade-marks might be subjected to imitation under the same name. The American consul general in London has been requested to look into the matter, and if the situation is as serious as reported, manufacturers will ask the State Department to take up the question of protecting American interests.

The provision of the British bill is in substance that when a trade-mark becomes so well known that the public use it as a common name the trade-mark shall become public property. This result is made to depend solely upon the action of the public over whom the trade-mark owner has no control. The proprietor of the trade-mark is given a period of four years in which to induce the public to change its habits, but experience has shown the futility of attempting to accomplish a change in the use of words by the public. The result may be the confiscation and dedication to the public in Great Britain of the most valuable American trade-marks.

CHANGES OF ADDRESS.

All changes of address of members should be sent to the General Secretary promptly.

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TURNER, LELAND,
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To Base Hosp., Camp Custer, Battle Creek, Michigan.

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To Naval Hosp., St. Thomas, Virgin Islands, U. S., U. S. N., R. F.

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MONTGOMERY, M.,
From Manila, Philippine Islands.
To 317th Sanitary Train, 92nd Division, Camp Funston, Kansas.

ARNER, B. B.,
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To 161 Beard Ave., Buffalo, New York.

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From P. O. Box 1521, Dallas, Texas.
To 1263 Park Ave., Kansas City, Kansas.

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From Corvallis, Oregon.
To Co. "A," Officers Training Camp, Camp Lewis, Washington.

BOLENBAUGH, A.,
From Richmond, Virginia.
To 1st Lt. Corps of England, U. S. N. B., Camp Lewis, Washington.

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BANDTEL, C. M.,
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To 1072—37th St., Oakland, California.

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To 2421 S. Dearborn St., Chicago, Illinois.

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To Collingswood, New Jersey.

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WILKE, L. W.,
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To Carroll, Iowa.

SOUTHARD, F. A.,
From 5619 Bramble Ave., Cincinnati, Ohio.
To San Francisco Quarantine, San Francisco, California.

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To Quincy, Massachusetts.

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To Residence Unknown.

BOTKIN, R. J., M.D.,
From Fuller Blvd., No. 510, Jersey City, New Jersey.
To Residence Unknown.

MIGUEL, A. R.,
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To Residence Unknown.

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From 419 Hancock Ave., Bridgeport, Connecticut.
To Residence Unknown.

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To Residence Unknown.

THOROMAN, R. R.,
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To Residence Unknown.

BERGREN, E. R.,
From Cagwin's Drug Store, Ames, Iowa.
To Residence Unknown.

ELLIOT, C. S.,
From Post Hosp., Fort Dupont, Delaware, (Sgt. 1st Cl. H. C., U. S. A.)
To Residence Unknown.

HARRIS, S. J.,
From 3032 Washington St., San Francisco, California.
To Residence Unknown.

SCHLOSSER, R. B.,
From 659 W. Franklin St., Baltimore, Maryland.
To Residence Unknown.

BERRY, E. N.,
From 116 Main St., Twin Falls, Idaho.
To Residence Unknown.

DECEASED.

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Baltimore, Maryland.

FERGUSON, G. A.,
New York, New York.

CORRELL, E. P.,
Eureka, California.

HUESTED, A. B.,
Delmar, Albany, New York.

MAISH, HENRY,
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BOOK NOTICES AND REVIEWS.

Year Book of the American Pharmaceutical Association, 1916, Volume V, containing the Fifty-ninth Annual Report on the Progress of Pharmacy, and Constitution, By-Laws and Roll of Members of the American Pharmaceutical Association, corrected up to January 28, 1918. The Year Book corresponds to Volume LXIV of the former proceedings of the Association. Frontispiece, Frederick J. Wulling, 64th President of the American Pharmaceutical Association. The volume is bound in cloth, 618 pp., price, $4.00. Chicago, Ill., 1918.

The Reporter on the Progress of Pharmacy is Henry V. Arny and the collaborators are: Charles W. Ballard, Karl S. Burkett, Zada M. Cooper, Brooke J. Davis, George C. Diekman, Hermann Engelhardt, Robert P. Fischelis, Henry J. Goeckel, Fanchon Hart, Julius A. Koch, William A. Puckner, Otto Raubenheimer, Louis Saalbach, Hugo H. Schaefer, Clyde M. Snow and John H. Wurdack.

The Reporter states in the Introductory that the preparation of the abstracts for this Year Book was made difficult by the absence of practically all journals from Germany,

Austria and even Switzerland. Abstracts from these sources were obtained from English, French and Dutch journals and notably from *Chemical Abstracts*, the editorial staff of which was able to secure sets of the 1916 journals from the Teuton nations. The proper credit is attached to each abstract printed on the pages which follow:

By employment of these aids, the present Year Book is about as comprehensive as its predecessors. The Reporter expresses his appreciation of the enthusiastic coöperation of his collaborators and his personal loss occasioned by the death of Martin I. Wilbert, a collaborator on the Report on the Progress of Pharmacy since 1911.

Aside from the fact that the above statements offer some information that would be part of a review, the Association desires that due acknowledgment be made to those who have contributed to this valuable work for American pharmacists. This volume presents the abstracts for 1916 and the work on the next one is well under way. It should be remembered that a Year Book can not be completed until some time after the year's activities have closed. The British Year Book closes in mid-year, but we consider the plan of the A. Ph. A. better in this respect.

As far as a review of the book is concerned it would be necessary to repeat much of that which was written relative to former editions. The arrangement does not differ materially from the previous volume, the work has been done carefully, the printing and binding of the book is good. There are nearly 2000 references in the Subject Index and that of the authors has about 1000 names, all of which speaks for the extent of the work represented in the preparation of the book.

We are at a loss to make any suggestions that would improve the work so ably done by the Reporter and his efficient co-workers. The members have heretofore expressed their appreciation of the Year Book and this same approval will be given to the present volume.

E. G. E.

Year Book of Pharmacy (British), comprising abstracts of papers relating to Pharmacy, Materia Medica, and Chemistry contributed to British and foreign journals from July 1, 1916, to June 30, 1917, with the transactions of the British Pharmaceutical Conference at the 54th annual meeting held in London, July 11, 1917. 12 mo., 438 pages, cloth. London, J. & A. Churchill.

J. O. Braithwaite is the editor of the Abstracts, Thomas Stephenson compiled the New Remedies Section and Reginald R. Bennett is the editor of the Transactions. As a frontispiece, the volume carries a portrait of Charles Alexander Hill, B.Sc., F.I.C., president of the Conference for 1917–18. His presidential address on "Our Medicine Supply in War Time" appears in full in the section of the book devoted to the proceedings of the Conference.

A Research List is included, presenting subjects for investigation. The following are two of the questions submitted, relating to belladonna root: "In what respects, if any, does a tincture from the fresh root differ in its composition and action from one of the dried root?" "Parcels of Indian belladonna root have given abnormal figures on analysis, indicating some base of a lower molecular weight than atropine. An investigation of this drug is required."

Three hundred and fifty pages are devoted to Abstracts. The arrangement of the subjects differs from the A. Ph. A. Year Book, but the purpose is the same to present the matter abstracted in convenient form for reference. Abstracts from German sources are few but the American journals have received correspondingly more attention. The first division is concerned with chemistry while pharmacy comes third. The index is complete, but there is no separate authors' index. Fifty-two publications have received attention by the authors on whom the work reflects great credit. Doubtless the Year Book meets with the same appreciation in Great Britain that is accorded to our own by American pharmacists. E. G. E.

Proceedings of the National Wholesale Druggists' Association.—Forty-third annual meeting held at Chicago, Ill., October 1 to 4, 1917.

This issue of the Proceedings of the National Wholesale Druggists' Association has more pages than those previously published. Primarily this speaks for a large volume of business transacted at the Chicago convention.

The report on legislative measures and rulings under the Harrison law are of particular interest to all druggists. As the activities of wholesalers and retailers are closely linked the very complete reports of various committees can be studied with profit by the latter.

Officers and committee members grace the first pages of the volume, and those succeeding list present and past officers. The Asso-

sociation has 251 active members and 336 associate members. The next convention of this Association will be held in New York City during the week of October 7, 1918.

State "Pure Drug" Laws enacted since the passage of the National Food and Drugs Act, June 30, 1906, with a reprint of said act as amended. 8vo., 732 pages. Compiled by the Proprietary Association of America and the National Wholesale Druggists' Association.

In compiling the laws affecting the drug business the National Wholesale Druggists' Association and the Proprietary Association of America perform a valuable service for the drug trade. The related laws of the Government, all States and U. S. Territories, as well as Cuban decrees and some municipal regulations are either printed in full or in extensive abstract. The compilation is useful for every druggist and more particularly for members of legislative committees. While the work is done for the benefit of the members of the participating associations, the service is by no means thus restricted and therefore the acknowledgment made at the beginning.

Practical Pharmacy for Pharmacists and Physicians.—A text-book for Students in Medicine and Pharmacy. Second Edition. By Birdsey L. Maltbie. Cloth, 6 by 9 inches, pages 400, $3.00. Distributors, The Druggists' Circular, 100 William Street, New York, 1917.

The distributors say of this book that it represents the author's endeavor to supply a condensed treatise on pharmacy, something more useful than the "quiz" books and yet less voluminous than the standard works on Pharmacy.

The book is divided into five parts and these are devoted to Pharmaceutic Operations, Galenic Preparations, Chemicals and Their Preparations, Products of Plants and Incompatibilities. A number of convenient and useful tables are included. The book is well adapted for students who desire to review, preliminary to further and more thorough study. It is also useful as a reference book for physicians. The volume contains nearly 400 pages, is well printed and bound in buckram.

THE FAIRCHILD SCHOLARSHIP AWARD POSTPONED.

To the Pharmacy Schools and Boards of Pharmacy:

The notice of postponement of the Fairchild Scholarship Award is printed on page 555 in this issue of the JOURNAL. Chairman H. C. Christensen, 4149 Vincennes St., Chicago, Ill., desires that due notice be given of such postponement until the Convention of the American Pharmaceutical Association in Chicago during the week of August 12, when the Committee, of which he is Chairman, and the Fairchild Scholarship Committee will come to a decision relative to the method of award and selection of the candidate.

In the meantime schools of pharmacy should prepare records of the qualifications of their leading students for the Fairchild Scholarship in line with Recommendation 5 of President R. A. Lyman's address, and which reads:

> "Recommendation No. 5.—That it be the sense of the Conference that Mr. Fairchild could render the greatest service to pharmacy by offering the scholarship to a graduate pharmacy student, in order that he might pursue some research problem for one full school year, in the school of his choice; and further, that this scholarship be awarded on the basis of the applicant's scholastic training, his standing as an undergraduate pharmaceutical student and upon his fitness to do research."

The action of the joint bodies at Indianapolis is recorded in the minutes of this meeting on pp. 60–64, inclusive, of the January issue, 1918, JOURNAL A. PH. A. A careful study of these pages is suggested.

It would seem advisable that the schools decide on the eligible candidates for the Fairchild Scholarship. It is also advised that a record be kept of the preliminary education possessed by the prospective candidates, of their pharmaceutical training and education, and of their ability to do research work.

The suggestion has been made, although this has not, as far as we know, been definitely agreed upon, that each School of the Conference propose *one* candidate, and that the deans of the Schools furnish the Fairchild Scholarship Examination Committee with data which will form the basis of their decision.

Doubtless Chairman Christensen will notify all Schools of the Conference, as promptly as is possible, of the conclusions reached by the Committee, and make definite requests for information from them that is necessary for making the award. The plan does not contemplate any other examination.

Schools and Boards of Pharmacy should confer with Chairman H. C. Christensen, whose address is 4149 Vincennes St., Chicago, Ill.

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Further information will gladly be furnished by any of the officers of the Association and members.

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* Deceased November 19, 1917.